FILE COPY

NEWS LETTER

Society of American Bacteriologists

OFFICE OF THE SECRETARY-TREASURER

STERLING WINTHROP RESEARCH INSTITUTE
RENSSELAER, N. Y.

VOLUME 20 . *August 1954* NUMBER 3

1953 OFFICERS AND COUNCILORS

President: C. B. VAN NIEL, Hopkins Marine Station, Pacific Grove, California
Past President: G. M. DACK, University of Chicago, Chicago, Illinois
Vice-President: H. O. HALVORSON, University of Illinois, Urbana, Illinois
Secretary-Treasurer: J. H. BAILEY, Sterling-Winthrop Research Institute, Rennsselaer, N. Y.
Business Manager: F. C. HARWOOD, Mt. Royal and Guilford Aves., Baltimore 2, Maryland
Councilors-at-Large: J. E. BLAIR, Hospital for Joint Diseases, New York, N. Y.
W. H. EWING, Communicable Disease Center, Chamblee, Georgia
K. B. RAPER, University of Wisconsin, Madison, Wisconsin
R. L. STARKEY, Agri. Exper. Station, New Brunswick, N. J.

Councilors Elected by Local Branches:

H. A. Wilson, Morgantown W. Va. ..... *Allegheny*
E. Jawetz, San Francisco, California ..... *Northern California-Hawaii*
S. C. Rittenberg, Los Angeles, California ..... *Southern California*
Richard Thompson, Denver, Colorado ..... *Colorado-Wyoming*
P. B. Cowles, New Haven, Connecticut ..... *Connecticut Valley*
Murray M. Streitfeld, Miami, Florida ..... *South Florida*
H. B. Harding, Chicago, Illinois ..... *Illinois*
L. B. Schweiger, Elkhart, Indiana ..... *Indiana*
Stanley Marcus, Salt Lake City, Utah ..... *Intermountain*
D. F. Holtman, Knoxville, Tennessee ..... *Kentucky–Tennessee*
Harriette D. Vera, Baltimore, Maryland ..... *Maryland*
Raymond Sarber, Detroit, Michigan ..... *Michigan*
George Reddish, St. Louis, Missouri ..... *Eastern Missouri*
C. A. Hunter, Topeka, Kansas ..... *Missouri Valley*
Vincent Groupé, New Brunswick, New Jersey ..... *New Jersey*
Erwin Neter, Buffalo, New York ..... *Central New York*
Julia M. Coffey, Albany, New York ..... *Eastern New York*
Richard Donovick, New York, New York ..... *New York City*
J. L. Etchells, Raleigh, North Carolina ..... *North Carolina*
A. P. McKee, Iowa City, Ia. ..... *North Central*
E. J. Staff, Providence, Rhode Island ..... *Northeast*
O. B. Weeks, Moscow, Idaho ..... *Northwest*
M. J. Foter, Cincinnati, Ohio ..... *Ohio*
N. B. Williams, Philadelphia, Pennsylvania ..... *Eastern Pennsylvania*
A. E. de Arêa Leão, Rio de Janeiro, Brazil, South America ..... *Rio de Janeiro*
Hilary Koprowski, Pearl River, N. Y. ..... *U. S. A. representative to Rio Branch*
Marion Hood, New Orleans, Louisiana ..... *South Central*
A. L. Kleckner, Athens, Georgia ..... *Southeastern*
C. E. Lankford, Austin, Texas ..... *Texas*
J. D. Reid, Richmond, Virginia ..... *Virginia*
J. E. Faber, Jr., College Park, Maryland ..... *Washington, D. C.*

Invited Members (Nonvoting):

J. R. Porter, Editor-in-Chief, THE JOURNAL OF BACTERIOLOGY; P. W. Wilson, Editor-in-Chief, BACTERIOLOGICAL REVIEWS; H. B. Woodruff, Editor-in-Chief, APPLIED MICROBIOLOGY; Orville Wyss, Chairman of the Program Committee; J. W. Bartholomew, Chairman of the Division of General Bacteriology; Erwin Neter, Chairman of the Division of Medical Bacteriology, Immunology and Comparative Pathology; J. H. Silliker, Chairman of the Division of Agricultural and Industrial Bacteriology; Howard Gest, Chairman of the Division of Physiology; and J. H. Richardson, Supervisor of Local Branches

Council Policy Committee:

C. B. Van Niel, *Chairman* J. H. Bailey, *Secretary*
G. M. Dack H. O. Halvorson J. R. Porter
W. W. Umbreit (1954) C. A. Stuart (1955) J. E. Blair (1956)

SOCIETY DUES

Section 2a of the Bylaws of the Society has been amended by mail vote of the members to read: "Regular membership dues shall be twelve dollars ($12.00) per year, of which eight dollars ($8.00) shall be for subscription to the *Journal of Bacteriology* and *Bacteriological Reviews*. The annual sustaining membership dues shall be seventy-five dollars ($75.00), which shall include a subscription to each of the Society's two journals and the News Letter."

Ballots on the question of raising the dues were included (as page 29) in the January News Letter. Despite the fact that a postage-free envelope was furnished for the convenience in voting, a disappointingly small proportion of the members voted. The vote was 655 in favor of the change, 489 against. Accordingly the bills for 1955 dues, which will be mailed to all members in the autumn, will be at the new rates: $12.00 for regular membership and $75.00 for sustaining members.

NOMINATIONS FOR 1955

The Nominating Committee, consisting of Drs. I. L. Baldwin (chairman), H. A. Barker, P. R. Edwards, C. E. Georgi and J. H. Hanks, presents the following candidates for the elective offices of the Society for 1955. One candidate is to be elected to the office of Vice-President and two as Councilors-at-Large. The biographical data presented below are adapted from "American Men of Science". Ballots will be mailed in the autumn in accordance with the provisions of the Constitution.

For President

Dr. H. Orin Halvorson, University of Illinois, Urbana, Illinois. Born March 26, 1897, River Falls, Wisconsin. B.S. Minnesota 1921, fellow 1921–1922; ch.E. 1922; Ph.D. 1928. Teaching fellow bacteriology Minnesota 1922–1923; instructor 1923–1928, assistant professor 1928–1930; associate professor 1930–1940; professor 1940–1949; Professor and Head of Department, University of Illinois 1949–. Civilian with O.S.R.D.; U.S.A. U.S.N. QMC, U.S.A. 1917–1919. Physiology of bacteria; biochemistry; food technology; sanitary engineering; sewage treatment processes; germicidal detergents; transformation of iron in nature.

For Vice-president

Prof. E. G. D. Murry, McGill University, Montreal, Canada. Born Johannesburg, South Africa, July 21, 1890. B.A. Cambridge 12, M.A. 18, Licentiate Society of Apothecaries, London 16. Senior demonstrator in Pathology, St. Bartholomew's Hospital, London 19. Research bacteriologist Medical Research Council of England 1920. Lecturer in Pathology, Cambridge 26–30; Professor of bacteriology, McGill 1930. Fellow Christs College, Cambridge 1923–1930. Member of subcommittees on infections and shock and blood substitutes of the National Research Council of Canada; pharmaceutical advisory committee, War Time Prices and Trade Board, Ottawa; Officer of the Order of the British Empire; Medal of Freedom, U. S. War Department 1947. Recorder bacteriology section. Fifth International Botanical Congress. Captain RAMC; research staff, RAM College 1915, 1917–1919. Member of the American Association of Advancement of Science, Society of American Bacteriologists, Association of Pathologists and Bacteriologists; Association of Immunologists, Biological Photographic Association, Association Artic Institute of North America; Royal Society of Canada; Canadian Medical Association; Canadian Public Health Association; Society of Pathologists; Society of Great Britain and Ireland. (Councilor 1930). General biology and pathological action of the meningococcus and of dysentery bacilli; bacterial endotoxins; agglutination reaction; protective immunization; virulence of bacteria.

Dr. C. A. Stuart, Brown University, Providence, R. I. Born Lyon Mountain, N. Y. May 26, 1893. Ph.B. Brown 1919 M.S. 1921, Ph.D. 1923. Instructor of bacteriology Brown 1923–1925; assistant professor 1925–1931; associate professor 1931-1944, professor 1944–. Lecturer R. I. Hospital 1925–1945; consulting bacteriologist to the Charles V. Champin Hospital. Chairman of the State Board Basic Science Examiners of R. I.; member of the Enterobactericeae sub-committee of the Nomenclature Committee, Internation Congress of Microbiology. U. S. A. 1917–1919. Member of

NOTICE

Members are requested to address all correspondence concerning applications for membership, payment of dues, changes of address, lost copies of the *Journals*, resignations and the like directly to:

Society of American Bacteriologists
Mr. Francis C. Harwood,
Business Manager
Mt. Royal and Guilford Avenues
Baltimore 2, Maryland

Remittances should be made payable to: Society of American Bacteriologists.

American Association of Advancement of Science; Society of American Bacteriologists (Council Policy Committee 1953–1955) fellow of the American Public Health Association. Association of Immunization. Society for Experimental Biology and Medicine. Physiology and immunological relationships of the Enterobactericeae.

For Secretary-Treasurer

Dr. John Hays Bailey, Sterling-Winthrop Research Institute, Rensselaer, N. Y. Born Chicago, Illinois, May 3, 1900. B.S. Chicago, 1924, Ph.D. 1928. D.P.H. Michigan 1938. Assistant in Anatomy, Chicago 1926–1928; fellow Nelson Morris Institute 1928–1929; Huesman fellow, James Whitcomb Riley Hospital and member of the Department of Pediatrics, school of medicine, Indiana 1929–1932; research Municipal Contagious Disease Hospital, Chicago 1932–1935; Senior bacteriologist State Department of Health, Illinois 1935–1938; assistant professor in bacteriology and director division of bacteriology, department of preventive medicine, public health and bacteriology, school of medicine Loyola University (Chicago) 1938–1941. Research bacteriologist Winthrop Chemical Company, Rensselaer, N. Y. 1942–1945; Chief Bacteriologist Sterling-Winthrop Research Institute 1945–. Civilian with the Office of Scientific Research and Development. Member of the American Association of Advancement of Science, Society of American Bacteriologists (Secretary-Treasurer 1953–1954) formerly councilor Eastern N. Y. Branch, member Editorial Board Journal of Bacteriology, fellow Institute of Medicine, Chicago; Society for General Microbiology, Great Britain Antibody formation; types of streptococci in normal and diseased children; mode of action of antibiotics; antibiotics of plant origin; penicillin; resistance to antibiotics.

For Councilor-at-Large

Dr. Charles A. Evans, University of Washington, Seattle, Washington. Born Minneapolis, Minn. February 18, 1912 B.S. University of Minnesota 1935, M.S. 1936, M.D. 1937, Ph.D. 1942. Teaching assistant in bacteriology Minnesota 1937–1938; agent diseases for animals and wild life, bureau of biological survey, U. S. Dept. of Agriculture 1938–1941; assistant scientist and later associate scientist, Minnesota 1938–1941; National Research fellow, Rochester 1941–1942; biological research supervisor, State Department of Conservation, Minnesota 1942–1943; assistant professor of bacteriology, Minnesota 1942–1944, associate professor 1944–1946. Professor and Executive officer University of Washington (Seattle) 1946–. Member of American Association for Advancement of Science. Society for Experimental Biology and Medicine. Society of American Bacteriologists (chairman of the committee on teaching) 1952–1953. With the Office of Naval Research. Thiamine deficiency of fur animals; tularemia; fox encephalitis; canine distemper; animal population studies; pathogenesis of an immunity to herpes infections of the nervous system; sources of polio virus in sewage; extra neural growth of polio-like viruses; virus infections of intraocular tissues.

Dr. Carl S. Pederson, N. Y. State Agricultural Experiment Station, Geneva, N. Y. Born April 30, 1897, South Milwaukee, Wisconsin. B.S. Wisconsin 1924; M.S. 1925; Ph.D. Cornell 1929. Instructor in chemistry, University of Wisconsin 1923–1925; Assistant, Cornell and N. Y. Experiment Station, Geneva 1925–1929. Associate in research 1929–1931; Professor in Bacteriology and Chief in Research 1931 to date. Member of the Society of American Bacteriologists; American Public Health Association; Institute of Food Technologists; Food fermentations; bacterial physiology; food spoilage; processing and preservation of food products.

Dr. L. W. Slanetz, University of New Hampshire, Durham, N. H. Born at Islip, N. Y. April 4, 1908. B.S. Connecticut. Agricultural College 1929. Ph.D. Yale 1932. Assistant sirologist, State Department of Health Connecticut and assistant instructor in bacteriology, Yale 1931–1932. Instructor, University of New Hampshire 1932–1934. Assistant professor 1938–1941, associate professor 1941–1948. Professor and head of the department 1948–. Assistant bacteriologist, Experiment Station 1934–1938; bacteriologist 1941–. American Association for the Advancement of Science; American Public Health Association; Society of American Bacteriologists (Council 1945–1947, 1951–1953). New Hampshire Academy of Science (vice-president 1947). Bovine Mastitis; oral bacteria and disinfectants; tuberculosis; fusiform bacteria; streptococci; staphylococci; staphylococcus bacteriophage.

Dr. Orville Wyss, University of Texas, Austin, Texas. Born at Medford, Wisconsin, September 10, 1912. B.S. University of Wisconsin 1937, M.S. 1938, Ph.D. 1941; assistant in bacteriology, University of Wisconsin 1937–1941. Research bacteriologist, Wallace and Teirnan Products 1941–1945; instructor, University of Texas 1939. Associate professor of bacterial physiology, Texas 1945–1948; Professor 1948–. Civilian with the U. S. A. American Association for the Advancement of Science; American Chemical Society; Society of American Bacteriologists (Council 1951–1952, vice-chairman, Program Committee 1952–1954, chairman 1954–). Bacterial physiology and genetics; biological nitrogen fixation.

THE PITTSBURGH MEETING, MAY 2–7, 1954

The 54th annual meeting of the Society was held at the William Penn Hotel, Pittsburgh May 2 to 7 inclusive. The report of the Local Committee has not yet been completed but preliminary estimates indicate that the meeting was a successful one. The total registration was 1,717, of which 337 were graduate students, 165 non-members and 85 exhibitors.

The divisions of the Society elected the following officers for the year 1954–55:

Division of General Bacteriology
- Chairman: J. W. Bartholomew
- Vice Chairman: B. Wesley Catlin
- Secretary: Arthur R. Colmer

Division of Bacterial Physiology
- Chairman: Howard Gest
- Vice-Chairman: J. J. R. Campbell
- Secretary: T. C. Stadtman

Division of Medical Bacteriology, Immunology and Comparative Pathology.
- Chairman: Erwin Neter
- Vice Chairman: Stanley Marcus
- Secretary: William J. Cromartie

Division of Agricultural and Industrial Bacteriology
- Chairman: J. H. Silliker

Council Meeting

The Council met Sunday May 2nd at 2:00 P.M., President Van Niel presiding, and May 5 at 2:20 P.M., Vice President Halvorson presiding. The following matters were acted upon:

1. **Archives Committee.** The request for a budget of $200 to be spent primarily for filing and storage cabinets for the Society's Archives was approved.
2. **Committee on Materials for Visual Instruction in Microbiology.** The following report was accepted and a budget of $200 for 1954 was approved:

Although the financial statement of the Committee indicates a slight decrease in the volume of business, the functions of the Committee should not be judged by the size of the balance. During last year a film on Steam Sterilization was produced for the Committee and several copies of the film placed in the hands of a commerical distributor to be furnished as free loans for educational purposes. This cost the producer of the film, a sustaining member of the S.A.B., several thousand dolars. It provided a film which was greatly needed in the teaching of bacteriology. Some of the films owned by the Committee continued to be used on television programs. The library of Congress recently began cataloging educational films. Bacteriology was the first field of science to have all known films catalogued.

The financial activities of the Committee for 1953 were as follows:

Receipts:		
Balance, cash on hand February 21, 1953	$141.48	
Received from S. A. B.	193.32	
Income from sale and rental of visual aids	1610.04	
		$1944.84
Disbursements:		
Photographic materials	934.42	
Postage	224.53	
Secretarial services to June 30, 1954	260.00	
One half expenses attending Audio-Visual Conference in Chicago	62.29	
Refund	.54	
Telephone and telegrams	22.36	
Printing and mimeographing	102.21	
Transportation	17.80	
Miscellaneous stationery supplies	8.93	
Royalties on film	24.00	
Tape recorder and accessories	184.90	
		1841.98
Balance		$102.86

There are outstanding invoices amounting to about $128.00 and outstanding unpaid bills amounting to about $25.00."

HARRY E. MORTON, *Chairman*

3. **Committee on Bacteriological Technique.** The report of this committee, printed below, was accepted.

"The committee is working toward the objective of converting the loose-leaf manual to a "book" publication. The target date is 1956.

Some of the plans currently under consideration for making this revision include:

1. Specific selection and recommendation of methods for determinative bacteriology—"standard methods" or "recommended methods".
2. A change in format.
3. Addition of new chapters:
   1. Methods for study of viruses
   2. Preservation of bacterial cultures
4. Arrangements for publication.

It is anticipated that some final decisions will be made relative to these matters at the current meeting.

The Standardization Sub-Committee of the Society of General Microbiology has expressed interest in the work of our committee and an exchange of information is planned."

Respectfully submitted,
MICHAEL J. PELCZAR, JR.
Chairman

4. **Committee on Teaching.** The final draft of the statement the Council directed the Committee on Teaching to prepare, was distributed to all

Councilors during the past winter for action by mail ballot. The draft was approved and is printed below:

Statement on the Training of College Students for Employment as Bacteriologists. Approved by the Society of American Bacteriologists on May 2, 1954.

A. Purpose

To describe for interested students, faculty and college administrators, the nature of training considered desirable for those who are to work in the field of bacteriology. This statement relates to the training of those expecting to enter employment at a level comparable to that of persons with a bachelor's degree in chemistry or engineering.

B. Faculty Qualifications

1. The administrative head of the microbiology or bacteriology department or of the curriculum in this field, should have been adequately trained and have demonstrated competence in the field of microbiology. If the curriculum is offered in a school that does not have a separate department of microbiology or bacteriology, there should be one qualified staff member with primary responsibility for this curriculum.
2. Staff training should be reasonably broad, and not too narrowly specialized in any one area of microbiology. To provide thoroughly competent instruction in the several areas of microbiology, a minimum staff of two microbiologists with different professional interests and backgrounds is usually essential. A staff of 3 or more is preferable.
3. A majority of the members of the staff, professors to instructors inclusive, should have been awarded the doctor's degree. Any other members of the academic staff should have abilities, training and knowledge of the subject which are of equivalent level.
4. A staff with proper diversification of training and background is highly desirable; in particular, excessive use of graduates of any one institution should be avoided.
5. The staff should possess opportunities, interests, and abilities such that there occurs a continuing production of published research accomplishments.
6. Lectures and quiz sections should not be placed in charge of undergraduate students. Laboratory sections should be in responsible charge of faculty members who may be assisted by qualified graduate students.

C. Facilities Required

1. The student laboratories should have standard laboratory fixtures and be equipped at least with water, gas and adequate lighting. Adequate space for each student should be supplied. Supplies and apparatus should be sufficient to allow each student to perform independently experiments of sufficient diversity to give him a desirable breadth of experience. Microscopes in good working order should be available in adequate numbers.
2. Conveniently located library facilities should be provided. The library should be well supplied with current scientific journals as well as with older sources of information.

D. Courses Recommended

1. The quality of basic training in related sciences is considered to be as important to the bacteriologist as his formal training in microbiology. For that reason courses in chemistry, biology and physics should be equal in quality to those taken by students trained for careers in chemistry, biology, and engineering.
2. Recommended courses are as follows:
   a. *Chemistry* including general chemistry, qualitative and quantitative analysis and organic chemistry.
   b. *Physics* including mechanics, heat, light and electricity.
   c. *Zoology*, *Botany*, or *Biology* courses exclusive of those acceptable as microbiology should comprise the equivalent of a one year's course in these subjects including a substantial amount of laboratory work.
   d. *Microbiology*. Courses in bacteriology and allied subjects should be so arranged that the student has a sound introduction to microbiology as a biological science prior to his instruction in more specialized areas. It is important that he be taught the main features of microbial nutrition and metabolism and that he learn adequate biochemistry to understand these and their relation to biochemistry of other living cells. An introduction to the principles of immunology is considered desirable for all students, particularly as these relate to the nature and origin of antibodies, and the characteristics of antigen-antibody reactions. As well grounded students are expected to have knowledge of pathogenic bacteriology, instruction in techniques of handling pathogens should be included and practiced in the laboratory.
   More specialized training in microbiology should vary in amount and kind with the interests of the student and policies of the school. Such courses in general should not be too restricted to applied fields and should not be aimed at teaching technical proficiency which in general is best learned during employment. They should rather seek to introduce the student to major areas of knowledge and to a sound understanding of representative kinds of techniques.
   e. Courses recommended but not required include mathematics through calculus, physical chemistry, statistical methods, biochemistry and genetics, and courses aimed at improving verbal and written communication.

5. **The Secretary-Treasurers Report** and that of the Journal of Bacteriology and Bacteriological Reviews were accepted as published on pages 4–10 of the April 1954 News Letter. The Secretary-Treasurer briefly outlined the discussion that is currently going on between the Society

and the division of Tax Exempt Organizations of the Income Tax Bureau over the tax exempt status of the Society. At the present time no decision has been rendered. The Council Policy Committee has decided that should an adverse decision be received, the Society will take all available appeal procedures. The outcome of these discussions directly affects every member because an adverse ruling would deny the member the right to deduct his membership dues on his income tax return. Such a ruling has been made in the case of at least two of our Local Branches.

6. **Committee on Meeting Places** reported that the Society had invitations from Detroit for the 1957 meeting, Milwaukee for the 1958 and St. Louis for 1959. The Detroit invitation was accepted, dependent upon the action by the members in the revising section 3 Article VIII of the Constitution. It was moved and carried that a committee be appointed to examine the possibility of holding annual meetings on University Campuses where all the facilities would be freely available to all members.
7. **The 1956 meeting.** The action of the Council at the San Francisco meeting in designating Houston as the site of the 1956 meeting, and the resolution passed and distributed to the local branches by the Northern California-Hawaii Branch was discussed. After free debate the Council voted to hold the 1956 meeting at Houston, Texas.
8. **The Proposed Exhibits Management Service.** The Williams and Wilkins Company has offered the following services to the Society:

Exhibit Management

The Williams and Wilkins Company agrees to assume responsibility for management of a technical exhibit to be held in conjunction with the annual meeting of:

in consideration of a fee of twenty-five percent (25%) of the sum of the gross billings for the sale of exhibit space. The company will assume the financial hazard in connection with any annual exhibit: i.e., in event of deficit the Society will not be liable.

The Services to Be Rendered by the Management Service

1. When the convention city has been selected:
   (a) Contact alll suitable hotels to determine suitability of facilities and to get price quotations. Contact Convention Bureau, if any, in the city to solicit their cooperation.
   (b) Submit findings to the Society with recommendations for approval.
   (c) Cooperate in getting publicity in advance of the convention to stimulate attendance, and in arranging adequate press coverage of the convention activities.
2. When the hotel has been selected:
   (a) Contract for exhibit hall, meeting rooms, and any other necessary facilities.
   (b) Make provision for as many sleeping room reservations as possible in the convention hotel and others if necessary for accommodation of those attending the convention.
   (c) Cooperate with any local program committee, if desired, in arranging for banquets, entertainment, or similar features.
   (d) Draw up diagram of exhibit floor layout, print and mail prospectus and handle all details incident to the sale of commercial exhibit space. No prospective exhibitor will be solicited unless he is first approved by the Society.
   (e) Provide space for scientific exhibits, if desired, and cooperate with the committee in charge of scientific exhibits in handling the arrangements.
   (f) Supervise the setting up of the entire commercial and scientific exhibit, provide all necessary services for exhibitors, including labor, decorators, sign painters, guards, storage of packing cases, etc. A representative will be available at all times during the convention to give service to all exhibitors.
   (g) Bill and collect for all exhibit space, pay all necessary bills for rental and facilities, and render an accounting to the Society.
3. The Exhibit Management Service will be responsible for the following expenses:
   (a) Expenses incurred by the Service for travel, secretarial help, correspondence.
   (b) Printing and mailing of prospectus to exhibitors and expenses incidental to the sale of space.
   (c) Billing, collecting, and accounting for exhibit space sales.
4. All other expenses will be a charge against the costs of providing facilities. The difference between the whole sum collected for exhibit space sales, less 25%, and the total expenses referred to in this paragraph shall be turned over to the Society as their profit.
5. This agreement shall be continued in force from year to year, unless notice of termination be given by either party not later than eight months prior to the next succeeding convention date.

Mr. E. F. Williams, President of Williams and Wilkins explained the proposed services. The Council ordered that a committee be appointed to study the proposal and to report to the Council Policy Committee.

9. **The Committee on Certification and Problems of Personnel** presented the following report:

Report of the Committee on Certification and Problems of Personnel

April 15, 1954

This committee was reactivated in the summer of 1952 because, as President Rene Dubos stated in a letter to the present chairman, ". . . of all the large problems of policy in the S.A.B., the one that occupies the center of the stage at the present time (and probably for several years to come) is that of certification of personnel." And he emphasized that the Committee's activities should not be restricted strictly to certification by adding, "As to the scope of work of the Committee, it is all you wish to make it." Having been charged with

such broad responsibilities the newly appointed committee felt obliged to devote the year 1952–53 to the task of becoming acquainted with its job.

We were aware at the outset of sharply conflicting opinions relative to certification, sometimes based more upon emotion than reason. But repeatedly we heard a demand from members in the broad area of medical-public health microbiology for some kind of professional standard within the S.A.B. In recognition of this demand the committee agreed upon certain points of policy that we record here: (1) we recognize that the S.A.B. is a scientific (rather than professional) society and should remain so; (2) we believe that, if the establishment of professional standards is desirable for one section of the Society, such action should be taken even though it offers no apparent benefit for other sections, and provided it is not likely to have a harmful effect upon the S.A.B. as a whole.

Such information as was gathered informally served to confirm our original impression that there is in the medical-public health field a lively interest in, and probably a real need for, setting up professional standards. But we still did not know whether the opinions obtained by informal solicitation actually represented those of the majority of members in the medical and public health field at both the doctorate and subdoctorate levels; nor did we have a clear understanding of the attitude of the majority of nonmedical members. Therefore, we asked the Council (see September 1953 News Letter) to authorize circulation of a questionnaire to the entire membership. This was approved in modified form and is reproduced below as it appeared in the January 1954 News Letter.

1. Which *one* of the following divisions of microbiology most closely describes your microbiological interests?
   (a) General Microbiology
   (b) Physiology and Biosynthesis
   (c) Medical Microbiology
   (d) Veterinary Microbiology
   (e) Virology
   (f) Food and Dairy Microbiology
   (g) Other
2. Is it your opinion that an attempt should be made to develop a program for certification in the division you have checked?
3. Comments.
4. Academic degree(s)
5. Date(s) received
6. Signature

By the end of March 1100 questionnaires had been returned, representing about 22 per cent of the S.A.B. membership. This is a small percentage and disappointing to us because there is no way of telling whether the missing 78 per cent represent apathy or negative opinions. Nevertheless, the data that were obtained do mean something. For example, they indicate that: (a) there is a lively interest among the medical-public health group; (b) this interest may be greatest at the subdoctorate levels; (c) there is probably a moderate degree of interest among workers who are chiefly interested in virology, veterinary microbiology or food and dairy microbiology.

Questionnaire Returns as of April 1, 1954

	Yes	No	Undecided or No Opinion	Total
General*				
Ph.D. or D.Sc.	26	82		108
D.V.M.	1	1		2
Master's	18	23	1	42
Bachelor's	13	15		28
Degree?		1		1
	58	122	1	181
Physiology				
M.D.		1		1
Ph.D. or D.Sc.	23	116	3	142
Master's	17	23	1	41
Bachelor's	6	8		14
Degree?		1		1
	46	149	4	199
Medical*				
M.D. or M.D. + Ph.D. etc.	50	13	6	69
Ph.D. or D.Sc.	123	30	5	158
D.D.S., V.M.D. ± Ph.D.	12	1		13
Master's	93	20	5	118
Bachelor's	55	9	5	69
Degree?	9	3		12
	342	76	21	439
Veterinary				
V.M.D. ± Ph.D.	12	6	1	19
Ph.D.	6	2		8
Master's	7	2		9
Bachelor's	3	2		5
	28	12	1	41
Virology				
M.D. ± Ph.D.	3	7		10
Ph.D. or D.Sc.	21	19	5	45
Master's	10	4		14
Bachelor's	4	1	1	6
	38	31	6	75
Food and Dairy				
M.D.		1		1
Ph.D. or D.Sc.	20	33	1	54
Master's	16	10	1	27
Bachelor's	11	4	1	16
Degree?	1	1		2
	48	49	3	100
Other				
M.D.		1		1
Ph.D. or D.Sc.	9	23	2	34
Master's	2	9	2	13
Bachelor's	6	11		17
	17	44	4	65
Totals	577	483	40	1100

* Includes some questionnaires on which more than one categorywas checked.

About one-fifth of the returns carried comments, some running to 2 or 3 typewritten sheets, and these proved to be the most valuable part of the survey. Many stated, for example, that they are in favor of certification only if it is within the framework of the S.A.B. The figures shown above, as well as the gist of the questionnaire comments, led our committee to decide to recommend to the Council Policy Committee and the Council that the S.A.B. proceed with a plan to set up professional standards in medical-public health microbiology along the general lines described in the remainder of this report.

Establishment of Professional Standards within the S.A.B.

Purpose

Microbiology has reached full stature as a biological science but it has poor professional standing. As a result microbiologists lack the same degree of prestige enjoyed by workers with equivalent training in other related disciplines. Therefore, one good reason for considering the establishment of professional standards within any division of microbiology is the expectation that the workers in it will receive better recognition from administrators, employers and their fellow scientists. But professional standards are not the magic key to a better life. They are valuable only if they are soundly constructed and carefully maintained. Therefore, the real purpose of "certification," as we see it, is to raise the level of practice of microbiology by designating, for whatever benefits may accrue to the individual, those persons who have received adequate didactic training and have demonstrated a high level of performance in the discipline of the field. The tangible results of "certification" would require considerable time to be noticed, but eventually the following advantages can be expected to develop.

1. The establishment of professional status would contribute to the professional recognition of microbiologists in that it would let the world know who—in the eyes of their colleagues—are qualified and competent microbiologists. In an area of activity where certification is already established, it would place the microbiologist on a plane with other certified specialists.

2. It would help to counteract the impression that microbiologists are glorified technicians—and often second rate ones at that. Only a few years ago, a man who employed numerous young scientists stated that he would rather hire a graduate in chemistry than one in biology or bacteriology as he knew the background of the chemist. The same situation may also be illustrated by the initial report of the Griffenhagen Committee of New York City civil service positions. It recommended that bacteriologists be employed at one grade lower than chemists, and it was only after cooperative action by a group of biological societies that the recommendation was changed and equal opportunities provided for both. Even then, there remained four grades for chemists that were higher than those for bacteriologists.

3. It would give employers information about recognized microbiologists that would enable them to obtain the services of such persons. The Federal Civil Service now uses as criteria for employment a bachelor's degree (regardless of quality of performance), six hours of bacteriology, and an objective test on general knowledge. "Certification" would provide sounder criteria than these and might result in the raising of these standards. Incidentally, it would mean that bacteriologists, rather than a civil service lay group, would be certifying bacteriologists.

4. It would be an aid to legislators in drafting new legislation resulting from the increased interest in licensure. Thus legislative bodies would be provided with qualifications established for bacteriologists by bacteriologists, whereas they now must set the standards themselves. In the years since the licensure of professional engineers, many groups have passed legislation or regulations requiring that certain positions be filled by licensed engineers. Certification could be recognized in the same manner.

5. In the uniformed services of our country, including the U.S.P.H.S., added consideration for promotion is given to those who are certified as specialists by their colleagues. At intervals during the past few years suggestions have been made that additional base pay be given to certified specialists. As the Veterans' Administration frequently follows the practices of the uniformed services, they might either accept or develop such a program. It is logical to assume that should such a program be developed, certified microbiologists would receive the same consideration.

6. It would indirectly influence the quality of academic instruction. Should a number of graduates of a certain institution fail to qualify for professional status, is it not likely that the school from which they were graduated would take remedial action?

7. It would strengthen in an individual the feeling of pride in his work. With greater professional acceptance, the field would be more attractive to the high school graduate as he considered future vocational activities. As a result, the field of microbiology would profit by the improved caliber of the student entering the field.

There are disadvantages in any certification program. The major one is that of "stratification" and "pigeonholing" because it would create different levels of microbiologists and it would label them even more distinctly than they now are as "medical microbiologists," "physiologists" etc. And we must recognize the possibility that, although it would be set up on a voluntary basis, certification would actually become mandatory for many. Employers, for example, might come to require it as prerequisite to employment or advancement. The question here is: Is this good or bad?

The program of certification is a progressive move in American science which cannot be ignored any longer. Progress means change, and change creates unpleasant situations for some. But in considering the entire problem, we must think not only in terms of the present but also of the future.

Professional standards on a broad basis

Any plan to establish professional rating must be designed with due regard for the heterogeneity of the S.A.B. membership. The recent questionnaire returns indicate that four major sections may be recognized if and when certification is under consideration. These are:

General Microbiology
Agricultural and Industrial Microbiology
Medical and Public Health Microbiology
Microbial Physiology

The plan outlined below is intended as a pattern for

certification in any or all of the four sections, and it is formulated with the thought that members whose chief interests are other than the medical and public health field may vote for certification at a later date. At the present time however consideration should be limited to the medical-public health field.

Certification in Medical and Public Health Microbiology
General principles

1. The S.A.B. should remain a scientific society without change in membership requirements.

2. Any S.A.B. member who considers himself or herself eligible may apply for certification.

3. The certifying agency shall be a Board sponsored by and within the framework of the S.A.B. and it shall consist entirely of S.A.B. members. It shall be known as the Board of Medical and Public Health Microbiology of the Society of American Bacteriologists.

4. Its chief function shall be to confer professional rating upon successful applicants by means of a certificate of special knowledge and training. Its existence does not create a superstructural organization.

5. Upon certification by this Board a member becomes a Fellow in Medical and Public Health Microbiology of the Society of American Bacteriologists. This designation shall not carry with it any special privileges within the S.A.B.

Such a certificate is in no sense an academic degree. It does not confer on any person a legal qualification or privilege to perform medical and public health microbiology, nor is it intended in any way to limit the Fellow's activities. Hence the fact that one holds a certificate of this Board places no restriction on holding a certificate of another Board.

6. If certification as a Fellow is to receive general respect, the requirements must be maintained at a high level. Therefore, the great majority of young nondoctorates would not qualify for certification.

7. Microbiologists who have not yet attained a certifiable level but have made significant progress in this direction shall be rewarded by a form of recognition other than outright certification. It is proposed that professional rating at the lower level be designated, "accreditation."

Board of Medical and Public Health Microbiology

Personnel

1. All members of the Board shall be members in good standing of the S.A.B.

2. The Board shall consist of 9 members whose individual terms shall be for 3 years. Appointments shall be so arranged as to provide for maximum continuity.

3. It is intended that the membership shall be selected in such a way as to provide broad knowledge and occupational experience in the area of medical and public health microbiology.

4. The original members shall be appointed by the President of the S.A.B. after consultation with the Committee on Certification and Problems of Personnel. Members of this Board are not eligible for reappointment for a period of at least 3 years.

5. New appointments shall be made from a slate of nominees submitted to the Council by the existing members of the Board, and the Council may add other names to this list if it so chooses. The new appointees shall be the three persons who receive the highest number of votes by the Council. Unexpected vacancies shall be filled by the same general procedure.

Duties

1. The principal function of the Certification Board shall be: (a) to receive applications from, pass upon the eligibility of and examine voluntary applicants; (b) to issue to successful applicants a certificate attesting to the attainment of the status of Fellow in Medical and Public Health Microbiology.

2. It shall hold written and/or oral examinations, and it shall determine the times and places of such examinations.

3. It shall be empowered by the Council of the S.A.B. to set such fees as are necessary to make the certification procedure selfsupporting.

4. It shall issue annually a cumulative list of Fellows in Medical and Public Health Microbiology.

Qualifications for Certification in Medical and Public Health Microbiology

1. Presentation of evidence that the applicant has a satisfactory moral and ethical standing.

2. Membership in good standing of the Society of American Bacteriologists.

3. Educational background in biological science equivalent to the requirements for a doctorate degree, or an earned doctorate degree, from a university whose educational standards are acceptable to the Certification Board. The word "equivalent" as used in this section shall be interpreted in such a way as to assure that certain of the didactic requirements may be waived under special conditions, provided other qualifications are met.

4. Didactic training consisting of formal courses acceptable to the Certification Board in the following areas: (a) Pathogenic Microbiology including a content or background of general microbiology satisfactory to the Certification Board; (b) Immunology and Serology; (c) Biochemistry, (d) the prerequisites necessary for an understanding of these areas.

5. A minimum of three (3) years of full time experience in the discipline of this section. Both the nature of this experience and the quality of performance must be acceptable to the Board. It is intended that this experience shall be post-doctorate, but the acceptability of a total of no more than one year of experience prior to or concomitant with formal academic training shall be determined by the Certification Board.

6. Applicants shall pass written and/or oral examinations provided by the Certification Board based upon broad principles of medical and public health microbiology.

7. Applicants whose qualifications satisfy the requirements under this section may be certified without examination at the discretion of the Certification Board, provided application is made within three (3) years from the date the Certification Board is established.

8. Applicants who cannot satisfy the full formal educational requirements but who have spent the immediately preceding ten (10) years consecutively in a responsible position in the discipline of this section may be certified without examination at the discretion of the Certification Board, providing such application is made within three (3) years after the establishment of the Board.

Accreditation at the Subdoctorate Level

Tabulation of the questionnaire returns from those members who checked "Medical Microbiology" as the field of their major interest showed that the highest ratios in favor of certification were among those who do not hold a doctorate degree. It is to be expected that many of these subdoctorate members with 10 years of experience acceptable to the Certification Board would be certified under item 8 of Qualifications for Certification. In accordance with item 7 under General Principles it proposed that the Council of the S.A.B. shall create a Committee on Accreditation in Medical and Public Health Microbiology.

Committee on Accreditation in Medical and Public Health Microbiology

Personnel

1. All members of this Committee shall be members in good standing of the S.A.B.
2. The Committee shall consist of 9 members whose appointments are arranged to provide continuity.
3. Three (3) members of the Committee shall concurrently be members of the Certification Board of Medical and Public Health Microbiology and shall be appointed for a term of one or more years by that Board.
4. Three (3) members of this Committee shall concurrently be members of the Committee on Curriculum and shall be appointed for a term of one or more years by the Committee on Curriculum.
5. The remaining three (3) members shall be appointed in accordance with items 4 and 5 under Personnel, Board of Medical and Public Health Microbiology.

Duties

1. The principal function of the Committee on Accreditation in Medical and Public Health Microbiology shall be to receive voluntary applications for accreditation in this area, examine eligible applicants and issue a statement of accreditation to successful applicants. The possession of a statement of accreditation shall not be construed as conferring any special privilege within the S.A.B.
2. It shall hold written and/or oral examinations. It shall determine the times and places of these examinations.
3. It shall be empowered by the Council to set such fees as are required to make the accreditation procedure selfsupporting.
4. It shall publish annually a cumulative list of individuals accredited in Medical and Public Health Microbiology.

Qualifications for Accreditation

1. Presentation of evidence that the applicant has satisfactory ethical and moral standing.
2. Membership in good standing of the Society of American Bacteriologists.
3. Educational training and experience fulfilling *one* of the following categories:

a. Master's degree in microbiology from an institution whose educational standards are acceptable to the Committee, *plus* one (1) year of experience acceptable to the Committee; or

b. Bachelor's degree with a major in microbiology from an institution whose educational standards are acceptable to the Committee, *plus* two (2) years of experience acceptable to the Committee; or

c. Bachelor's degree from an institution whose educational standards are acceptable to the Committee and based upon didactic training which includes the courses recommended by the Committee on Curriculum in its report of December 24, 1953. *In addition,* these applicants shall have had three (3) years of experience acceptable to the Committee.

4. As general policy, a written and/or oral examination shall be required.
5. At the discretion of the Committee applicants who fulfill at least one of the three qualification categories under item 3 may at the discretion of the Committee be accredited without examination.
6. Applicants whose educational training and experience do not fulfill any one of the three qualification categories under item 3 may at the discretion of the Committee be permitted to take its examination. A level of performance in this examination acceptable to the Committee shall be suitable basis for accrediting such applicants.

Comment

If the Council votes to proceed with the plan outlined in this report, the Committee on Certification and Problems of Personnel considers it highly desirable to have the advice and cooperation of the Francis-Syverton Subcommittee in working out the details of the formal plan.

10. **The Director of Local Branches** recommended that New Mexico be included in the boundaries of the Colorado-Wyoming Branch, and that the city of Columbia, Mo. be included in the boundaries of the Northwest Branch. These changes were adopted.
11. **U. S. Public Health Service Grants and Loyalty.** The Council Policy Committee discussed the published statement of the Secretary of the Department of Health, Education, and Welfare dated April 28, 1954 as well as the resolution introduced by Dr. John Edsall, professor of biochemistry, Harvard University at the Atlantic City meeting of the Society of American Biological Chemists and unanimously adopted April 15, 1954, copies of which follow.

"The American Society of Biological Chemists holds that the support of open scientific research, by government or private agencies, should be based on the competence and integrity of the investigator and the merits of the problem to be studied. The Society fully recognizes the paramount need of maintaining national security by careful investigation of all workers engaged in classified research. It holds, however, that when research is open and unclassified, the imposition of political or other extraneous requirements on the investigator as a condition for awarding a research grant threatens the freedom of science and the principles on which the American social order is founded.

Members of the society have received reports, from reliable sources, indicating that certain government agencies have recently violated these fundamental principles by revoking or withholding unclassified

research grants, for reasons unconnected with the competence or integrity of the investigator. Further it is reported that these actions are being taken, not casually or incidentally, but as a matter of settled policy.

Therefore the Society asks the council to transmit an urgent request to the National Academy of Sciences, asking the academy to investigate these reports and, if they prove well-founded, to take strong and appropriate action to maintain the freedom of fundamental scientific investigation in the United States."

April 28, 1954

THE FOLLOWING STATEMENT WAS ISSUED TODAY BY OVETA CULP HOBBY, SECRETARY OF THE DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

The research grant programs are conducted by the Public Health Service through the National Institutes of Health. The Surgeon General relies heavily on Study Sections and seven statutory National Advisory Councils for assessment of the scientific merit of requests for these grants-in-aid. These committees of non-governmental reviewers are concerned exclusively with the technical competence and professional integrity of applicants and with the probable importance of their research problems. The Surgeon General follows the recommendations of these advisors very closely in acting on applications but the final responsibility in making a grant is vested in him by law.

The Department is aware of the importance to society of free scientific research-inquiry and seeks to avoid any undue interference in the affairs of scientists engaged in open or unclassified research supported by Federal funds. It has been our constant objective to administer the research grant programs in a manner that provides the greatest possible degree of freedom to the scientist and that promotes his greatest productivity for the benefit of our people.

We do not require security or loyalty investigations in connection with the award of research grants. When, however, information of a substantial nature reflecting on the loyalty of an individual is brought to our attention, it becomes our duty to give it more serious consideration. In those instances where it is established to the satisfaction of this Department that the individual has engaged or is engaging in subversive activities or that there is serious question of his loyalty to the United States, it is the practice of the Department to deny support.

If the subject is an applicant, the grant is not awarded. If the subject is an investigator responsible for a grant-supported project or is the recipient of salary from the grant, the grant is terminated unless the sponsoring institution desires to appoint an acceptable substitute.

The Public Health Service supports a large segment of medical and related research through more than 2,000 grants which involve some 14,000 persons each year. Although this practice has been followed since June 1952, fewer than 30 persons have been denied support.

The Council Policy Committee addressed the following letter, with copies to the Surgeon General, U.S.P.H.S. and the President, National Academy of Science, to the Secretary of the Department of Health, Education, and Welfare. The letter was presented to the Council for approval which was received after full debate.

May 10, 1954

The Hon. Oveta Culp Hobby
Secretary of the Department of
Health, Education, and Welfare
Washington, D. C.

The Society of American Bacteriologists, through its Council, has made a careful study of your statement of April 28, 1954 regarding the policy of the Department of Health, Education, and Welfare with reference to the handling of research grants.

The Society wishes to commend you highly for your recognition of the importance of free scientific inquiry. However, since the announced policy leaves room for arbitrary decisions, the Society of American Bacteriologists suggests that the policy be so modified as to preclude this possibility. We further suggest that this modification be based on consultations with the National Academy of Sciences, in whose leadership the Society of American Bacteriologists expresses its unequivocal confidence.

12. **The Missouri Valley Branch** introduced a resolution calling for the appointment by the Society of two committees to act with the presently existing committees of the American Public Health Association concerned with standard methods for the examination of water sewage, industrial wastes, milk and other food products. The resolution was adopted.

The Council approved the revision of section 3 of Article VIII of the Constitution to read: "The time and place of each Annual Meeting shall be fixed by the Council and notice of the same shall be sent to each member of the Society." The revision was thus ready for presentation to the membership at the general business meeting of the Society.

Article VII of the Constitution was discussed and it was the consensus of the Council that revision of this section was unnecessary.

Annual Business Meeting

The annual business meeting of the Society was called to order by President Van Niel at 11:10 A.M. May 6, 1954 in the Ball-room of the William Penn Hotel.

The Resolutions Committee report was read by Dr. John H. Hanks, chairman:

The annual meeting of the Society of American Bacteriologists is an occasion for renewing personal friendships and for broadening our experience in an important area of science. At the same time we are reminded of the rich heritage which has brought us to this stage in our development, of inspiring examples among our present leadership, and of colleagues who serve us so unselfishly on these occasions. In behalf of the members of the

Society we attempt, therefore, to express a few of these sentiments in the following resolutions:

The members of the Society note with deepest regret the passing of several of its loyal and productive members. Among the friends and colleagues who contributed exceptional leadership to bacteriology and the Society are included such distinguished persons as Jules Bronfenbrenner, J. Russell Esty, F. C. Harrison, J. Howard Mueller, Leo F. Rettger, H. L. Russell.

The members attending the annual meeting have this year derived particular pleasure and inspiration from the very timely presence of one of our two honorary members from abroad. If my calculations be trustworthy this means that this category of membership has shown a 50% strength of representation, which exceeds by a wide margin the very best that can be shown by the whole Society. We are indebted to Professor Albert Jon Kleeyver for having participated in our scientific sessions and for his generous and kindly remarks at our Banquet assembly.

We are indebted to the Program Committee for having selected and arranged papers and discussions which review and analyze many of the accomplishments of our members during the past year.

Members attending this meeting of the Society are indebted to each and every member of the Local Committee for its careful arrangement of every facility for effective exchange of information; for having anticipated every need for our personal comfort and pleasure; and for the innumerable personal sacrifices which have been accepted so generously by our gracious hosts. We wish, therefore, to express our deepest appreciation to each member of this committee. To the many duties which have been imposed upon its thoughtful and efficient chairman, Dr. F. Sargent Cheever, we would add but one more item: to act in our behalf in thanking any member of the Local Committee who may not be present to learn at first-hand of our gratitude.

WERNER BRAUN
HARLYN O. HALVORSON
JOHN H. HANKS, *Chairman*

After a moment of silence in respect for those members who had died during the year, the report was accepted.

The Secretary-Treasurer reported on the actions taken and business transacted by the Council at its two meetings, the report being interrupted to allow for free discussion by the members of the 1956 meeting place, the awarding of grants-in-aid by the U. S. Public Health Service, as well as the report of the Committee on Certification and Problems of Personnel (see page 6).

The question of revision of Section 3, Article VIII (Meetings and Quorums) was presented to the meeting. It was pointed out that the purpose of the revision was to legalize the practice that has been forced upon the Society in its choice of meeting places. The large hotels require bookings for meetings the size of the Society's at least three years in advance. To become operative the revision would have to be adopted by a majority of the members present and voting and receive the approval of two-thirds of the members voting by a subsequent mail ballot. The revision would make Section 3 Article VIII read: "3. The time and place of each Annual Meeting shall be fixed by the Council and notice of the same shall be sent to each member of the Society at least three weeks previous to the date of said meeting." Adoption of the revision was moved, seconded and carried.

There being no further business the meeting adjourned at 12:40 P.M.

JOHN HOWARD MUELLER

1891–1954

John Howard Mueller, Charles Wilder Professor of Bacteriology and Immunology at Harvard Medical School since 1946, died of coronary thrombosis on February 16, at his home in West Roxbury. Son of a Unitarian minister from Switzerland, he was born in Sheffield, Massachusetts, on July 19, 1891. Possessing the qualities of a sturdy oak capable of growing and flourishing in the stoniest soil, his industry and productiveness became a legend in every environment to which he was transplanted. His humor, and the humility with which he regarded himself, are summed up in his own designation: "High school chemist!"

The high school of Bloomington, Illinois, should indeed be honored if solely responsible for a chemist who discovered and identified the essential amino acid, methionine, in three short years. To establish the constitution of cystine, "the only sulphur-containing amino acid", had required one hundred years. Collaborating with Zinsser, this achievement was followed by demonstration that antibodies are formed against polysaccharide complexes and that the carbohydrates and proteins in tuberculin play distinctly different roles in hypersensitivity. An interlude with the Rous sarcoma virus resulted in the unusual joint publication in which Howard Mueller wrote a separate discussion opposing the conclusions of Gye, whose work was under critical examination. His brilliant investigation of the nutritional requirements and the toxin production of two important pathogens—the diphtheria and the tetanus bacilli—are regarded as classics. Definition of the essential role of nicotinic acid and beta-alanine preceded recognition of the first as a vitamin or the second as a constituent of pantothenic acid. This work provided the first instance of a fastidious pathogen being propagated on defined constituents, afforded a new basis for the preparation of purified toxoid, and opened the way to discovery of the important role of iron in toxin production. Analogous investigations with the tetanus bacillus have divulged in large measure the secrets involved in the growth and toxin production of this organism.

His innate sense of the unity of science was revealed by his early preparation for these investigations. He qualified for the degree of B.S. with

honors in biology at Illinois Wesleyan University in 1912. At the University of Louisville, he served as instructor in physiological chemistry, attended courses in pathology and bacteriology, and received his M.S. in 1914. His keen interest in a summer course in Pathology at the College of Physicians and Surgeons of Columbia University in 1914 resulted in an invitation to continue his studies there. He was awarded the Ph.D. Degree in 1916, with minors in biochemistry and bacteriology. In 1917, he enlisted as a private and went overseas with the Presbyterian Hospital Unit. He later became a Lieutenant in the Sanitary Corps, and for a time served as director of the expeditionary laboratory. At the close of World War I an instructorship in bacteriology at Columbia initiated his association with Hans Zinsser; occasioned inquiry into the nutrition of hemolytic streptocicci; and by 1922 had brought forth methionine and an Associate Professorship. In 1923 he accompanied Zinsser to Harvard, where his early years were occupied with studies of the "residue antigens" (1923–26) and with the controversial problem of the Rous sarcoma virus (1925–29). The subsequent decade was devoted to the diphtheria bacillus and the final one to the tetanus bacillus and its toxin production.

Young men found in Howard Mueller a man whose respect could be won only by the highest order of sincerity and perseverance, and were rewarded by the great depth of his loyalty and affection. The full extent of his generosity and kindness will apparently never be discovered. He was as sly in these matters as he was forthright in all others. His teaching was distinguished by clarity and terseness and illuminated by lightning flashes of pithy wit.

He lived with the simplicity of a man content with uninterrupted investigation. Respite in different toil was provided by three acres of apple orchard and, in easier moments, by the violin, trout-fishing in Halifax and, more recently, golf. Organizational activities and personal honors were shunned as naturally and assiduously as duty and investigation were pursued.

His contributions to science were recognized by election to the National Academy of Sciences in 1944 and by honorary membership in the Harvey Society in 1944. He organized surveys and assisted in the development of control measures for serious outbreak of diphtheria in Halifax and in Germany. Caring little for the honors we wished to bestow upon him, and solely in response to a mandate, he served as President of our Local Branch of the Society of American Bacteriologists during one of his busiest years and under circumstances of great import to this group.

John Howard Mueller has been eulogized for notable contributions to biochemistry, bacterial nutrition and the intricate problems of toxin production. His achievements in this field represent a landmark which for years will be prominent despite the rapid progress being made in these areas of investigation. Those who know this stalwart man as a working associate remember with gratitude his unimpeachable integrity, his impatience with superficiality, his courageous support of all that seemed right or reasonable, and his staunchness and wisdom in times of decision. Though constant loyalty to investigation amounted almost to total preoccupation, he never failed to set aside this devotion in any matter of concern to the department or if any need of a friend required his attention.

His friends here record an affectionate acknowledgement of his having lived among us and having provided a rare example of brilliant achievement based solely on merit and integrity.

AUGUSTUS BALDWIN WADSWORTH, M.D.

1872–1954

Dr. Wadsworth was noted both as an investigator in immunology, pathology, and bacteriology, and as an administrator of great originality and competence. He was born in Brooklyn, New York, October 25, 1872 and died in New York City, June 1, 1954.

Dr. Wadsworth graduated from the Massachusetts Institute of Technology in 1893 and from the College of Physicians and Surgeons, Columbia University, 1896. He returned to the College in 1899 and became Assistant Professor of Bacteriology in 1909, leaving in 1914 to become Director of the Division of Laboratories and Research of the New York State Department of Health, Albany. He retired in 1945. Thus, for more than fifty years Dr. Wadsworth was active in medical research and a leader in the development of laboratory service as an essential part of governmental health organizations—a movement that is one of America's most important contributions to the principles and practice of public health.

Dr. Wadsworth went to Albany as an unusually well-qualified physician, perceiving the great force science might exert on the public health. He was quick to sense the nature of the scientific discipline, the overriding importance of basic phenomena and of precision in technic and expression. Dr. Wadsworth brought to his new undertaking a remarkable insight into the revolution that was taking place in medicine, and a determination to elevate and preserve the standards of scientific work. He always outstandingly represented that principle in the field he entered, the public health laboratory field. Through his efforts the Division of Laboratories and Research was organized and in time became distinguished. As early as 1921 the Public Health Council of New York State recorded in its annual report that a new standard had been set for the world in the development of public

health laboratory service for a state. Decentralization to county, municipal, or private laboratories united by a common adherence to minimum standards established by the central laboratory, but with full local autonomy, was a pioneer movement in New York State under Dr. Wadsworth's initiative and leadership.

Dr. Wadsworth was an outstanding investigator in the field of pneumococcus infection. His studies in 1912 on pneumococcus infection in animals and on the action of immune sera were a basis for the subsequent position of the New York State laboratories in the diagnosis and treatment of human infections. Similarly, Dr. Wadsworth was preeminent in the production and standardization of antimeningococcus and antistreptococcus sera. In 1922, he was American representative at the International Conference on the Standardization of Serum and Serological Tests held by the Health Section of the League of Nations in Paris.

His studies in 1919 of the endocardial lesions developing during pneumococcus infection in horses are significant to an understanding of the pathogenesis of human bacterial endocarditis. Endocarditis was produced in these animals without mechanical injury to the heart valves; it did not develop until there was a high antibody titer in the blood, a condition favoring localization of the bacteria. In short, the findings in the immunized horse are similar to the "bacteria free" cases in man.

Other investigations in the phenomena of infection and immunity led to the development and standardization of the quantitative complement fixation test in the serodiagnosis of infectious disease, which Dr. Wadsworth applied in particular to tuberculosis and syphilis. The quantitative complement fixation test for syphilis was in practical operation in the laboratories of the New York State Department of Health as early as 1937. This quantitative test has since been applied widely in studies of both early and late syphilis.

The Augustus B. Wadsworth Lectureship was established in 1950 by the staff of the Division of Laboratories and Research and the New York State Association of Public Health Laboratories. Annually since then, lectures on various phases of clinical and laboratory medicine and medical education have been given by outstanding authorities.

In 1953 Dr. Wadsworth received the Hermann M. Biggs Memorial Award for outstanding service in the field of public health in New York State.

CHARLES BRADFIELD MORREY

1869–1954

Dr. Charles B. Morrey, professor emeritus and former chairman of the Department of Bacteriology, Ohio State University, died at his home in Columbus after a long illness on April 21st. Dr. Morrey established the Department of Bacteriology at Ohio State in 1903 and served as chairman of the department until his retirement in 1935.

JOSEPH E. GREAVES

1880–1954

Dr. Joseph Eames Greaves, Professor Emeritus and formerly head of the Department of Bacteriology and Biochemistry at Utah State Agriculture College, died June 6th at Logan, Utah. Dr. Greaves headed the Department of Bacteriology and Biochemistry at Utah from 1912 until his retirement in 1946. He was a consulting editor for *Soil Science* and a productive worker in this field.

THE SECOND TEACHING INSTITUTE ON PATHOLOGY, MICROBIOLOGY, IMMUNOLOGY, GENETICS

The second in a series of Teaching Institutes sponsored by the Association of American Medical Colleges will focus on pathology, microbiology, immunology, and genetics. The first one, held at Atlantic City in October 1953, covered the areas of physiology, biochemistry, and pharmacology.

The objectives of the institutes are to provide an opportunity for medical educators to discuss important teaching problems, to review current experiments in medical education, to exchange philosophies and experiences, and to make any suggestions which might improve the effectiveness of medical teaching and the educational opportunities offered to medical students.

The 1954 Teaching Institute will be held October 10–15. The Coordinators of Cancer Teaching will cooperate and participate in this Teaching Institute, and they will hold their own meeting October 15–16. The annual meeting of the Association will follow on October 17–20. All meetings will be at the French Lick Springs Hotel, French Lick, Indiana.

Attendance at the Teaching Institute will be by invitation only and will be limited to 120 participants. One teacher from each of the 95 medical schools in the United States, Canada, Puerto Rico, and the Philippines has been nominated by the Committee and invited by the AAMC, and the total group of participants will represent a balance among the several disciplines and areas that will be explored at the Institute.

In advance of the Institute, medical school participants will collect background information and opinions from their colleagues and schools for the use of committees in planning topics for discussion. The Institute will be a working conference, with participants meeting in groups of ten to fifteen and discussion will be entirely informal.

The Committee on the 1954 Teaching Institute, which is responsible for its organization and planning, is as follows:

*Douglas H. Sprunt, Professor of Pathology, University of Tennessee, *Chairman*
Robert A. Moore, Vice-chancellor, University of Pittsburgh, *Co-chairman*
*Granville A. Bennett, Dean, University of Illinois College of Medicine
Israel Davidsohn, Professor of Pathology, Chicago Medical School
*Charles A. Evans, Professor of Microbiology, University of Washington School of Medicine
Colin M. MacLeod, Professor of Microbiology, New York University College of Medicine
James V. Neel, Associate Professor of Internal Medicine, and Associate Geneticist, Institute of Human Biology, University of Michigan Medical School
*Robert E. Stowell, Professor of Pathology and Oncology, University of Kansas School of Medicine
*Emory D. Warner, Professor of Pathology, State University of Iowa College of Medicine
Stanley E. Dorst, Dean, University of Cincinnati College of Medicine; President, Association of American Medical Colleges
George Packer Berry, Dean, Harvard Medical School; Chairman, AAMC Committee on Teaching Institutes and Special Studies
John M. Stalnaker, Director of Studies, AAMC; Secretary, AAMC Committee on Teaching Institutes and Special Studies

The four basic areas for discussion at the Institute, and the subcommittee which will be responsible for each area, are:

The Objectives of Teaching

Granville A. Bennett, *Chairman*
Walter J. Burdette, Associate Professor of Surgery, Louisiana State University School of Medicine
Israel Davidsohn, Professor of Pathology, Chicago Medical School
Sidney C. Madden, Professor of Pathology, University of California School of Medicine (Los Angeles)
Walter J. Nungester, Professor of Bacteriology, University of Michigan Medical School
Alwin M. Pappenheimer, Jr., Professor of Microbiology, New York University College of Medicine

Problems of the Teacher

Emory D. Warner, *Chairman*
D. Murray Angevine, Professor of Pathology, University of Wisconsin Medical School
William C. Boyd, Professor of Immunochemistry, Boston University School of Medicine
Edwin A. Lawrence, Professor of Surgery, Indiana University School of Medicine

* Members of Executive Committee

R. G. E. Murray, Professor of Bacteriology and Immunology, University of Western Ontario Faculty of Medicine

Interrelationships

Robert E. Stowell, *Chairman*
James W. Moulder, Associate Professor of Biochemistry, University of Chicago School of Medicine
Ira T. Nathanson, Associate Clinical Professor of Surgery, Harvard Medical School
James V. Neel, Associate Professor of Internal Medicine, and Associate Geneticist, Institute of Human Biology, University of Michigan Medical School
Robert F. Parker, Associate Professor of Microbiology and of Medicine, Western Reserve University School of Medicine
James P. Tollman, Professor of Pathology and Bacteriology and Dean, University of Nebraska College of Medicine

Problems of the Student

Charles A. Evans, *Chairman*
Thomas P. Almy, Associate Professor of Neoplastic Diseases (Medicine), Cornell University Medical College
John B. Graham, Assistant Professor of Pathology, University of North Carolina School of Medicine
William B. Wartman, Professor of Pathology, Northwestern University Medical School
Dennis W. Watson, Professor of Bacteriology and Immunology, University of Minnesota Medical School

REFRESHER COURSES

The Communicable Disease Center, Chamblee, Georgia, announces the following Laboratory Refresher Training Courses, to be given during the period July 1954–June 1955. Information and application forms should be requested from Laboratory Training Services, Communicable Disease Center, U. S. Public Health Service, P.O. Box 185, Chamblee, Georgia.

Laboratory Diagnosis of Bacterial Diseases
- 8.40 Part 1. General Bacteriology
  Sept. 13–24, 1954
- 8.41 Part 2. General Bacteriology
  Sept. 27–Oct. 8, 1954

Laboratory Diagnosis of Parasitic Diseases
- 8.00 Part 1. Intestinal Parasites
  Sept. 13–Oct. 8, 1954
- 8.01 Part 2. Blood Parasites
  Oct. 11–29, 1954

Laboratory Diagnosis of Rabies
- 8.26* Oct. 18–22, 1954

* Courses 8.26, 8.20, 8.21, and 8.25 will be presented at the Virus and Rickettsia Laboratories, Montgomery, Alabama. Other courses listed will be presented at the laboratories at Chamblee, Georgia.

Laboratory Diagnosis of Viral and Rickettsial Diseases
8.20* Oct. 18–29, 1954
Laboratory Diagnosis of Bacterial Diseases
8.50 Enteric Bacteriology
Oct. 18–29, 1954
Laboratory Methods in Medical Mycology
8.15 Part 1. Cutaneous Pathogenic Fungi
Nov. 1–12, 1954
8.16 Part 2. Subcutaneous and Systemic Fungi†
Nov. 15–26, 1954
Laboratory Diagnosis of Tuberculosis
8.55 Nov. 15–26, 1954
Laboratory Methods in the Study of Pulmonary Mycoses
8.17 Nov. 29–Dec. 10, 1954
Laboratory Diagnostic Methods in Veterinary Mycology
9.40 Dec. 13–17, 1954
Laboratory Diagnosis of Rabies
8.26* Mar. 14–18, 1955
Laboratory Diagnosis of Viral and Rickettsial Diseases
8.20* Mar. 14–25, 1955
Laboratory Diagnosis of Malaria—8.05‡
Virus Isolation and Identification Techniques—8.21‡
Laboratory Diagnosis of Influenza—8.25‡
Typing of *Corynebacterium diphtheriae*—8.42‡
Special Problems in Enteric Bacteriology—8.51‡
Phage Typing of *Salmonella typhosa*—8.52‡

CRITICAL YEARS AHEAD IN SCIENCE TEACHING

Certain educators, disturbed by some signs of progressive deterioration in the quality of science instruction in the secondary schools, called a conference in the latter part of the summer of 1953 at Harvard University. The conference, supported by the Carnegie Corporation, appraised the situation as it exists today, and projected its findings to the extent of children already born.

"What are the facts which will tell us what is happening in science teaching? What do these facts mean for the future?" These questions are approached, and to some extent answered, in a 48 page booklet entitled *Critical Years Ahead in Science Teaching*, a report on nation wide problems of science teaching in the secondary schools.

Copies of the report are available without charge from Dr. Elbert C. Weaver, Phillips Academy, Andover, Mass. It is asked that a self-addressed mailing label be enclosed with requests for the booklet.

† Completion of course 8.15 or equivalent education or experience is a prerequisite.

‡ Courses presented by *Special Arrangement.*

The roster of course 8.20 will close 6 weeks prior to the beginning of the course.

THE DISCOVERY OF UNICELLULAR LIFE

The editors of Chronica Botanica have published a "Keepsake" consisting of excerpts from *Collected Letters of Antoni van Leeuwenhook*, Vols. 1 and 2 at the occasion of the dedication of the Institute of Microbiology at Rutgers University. Copies of the Keepsake are available at no charge upon application to The Chronica Botanica Co., Waltham 54, Mass.

The reprint consists of 12 pages of excerpts from Leeuwenhook's letters to the Royal Society of September 7, 1674, and October 9, 1676. In the former, Leeuwenhook reports on a number of unicellular algoe and flagellates, thus creating microbiology; in the second gives the first description of bacteria—"little eels".

Reading these excerpts stimulates one to read or to reread the writings of this truly remarkable "explorer of the invisible world". Four volumes of these, *Collected Letters of Antoni van Leeuwenhook* have been published by N. V. Swetz and Zeitlinger, Amsterdam, the Netherlands.

EMPLOYMENT BUREAU

At the request of Dr. Grant Stahly, director for the past several years, President Van Niel has appointed a new director of the Employment Service. Dr. Milton J. Foter assumed the duties of this Society office July 1, 1954. Inquiries and correspondence concerning this service should be addressed to Dr. Milton J. Foter, Bacteriology Section, Robert A. Taft Sanitary Engineering Center, 4676 Columbia Parkway, Cincinnati 26, Ohio.

JOURNALS FOR SALE

Dr. Roger D. Reid has the following issues of the Journal of Bacteriology for sale:

Volume 35 to Volume 55
Volume 56 to Volume 65
Volume 34 nos. 2, 3, 4, 5 and 6
Volume 55 nos. 2, 4, 5 and 6

All are unbound but in good condition. Inquiries should be addred to Dr. Reid at 5 Park Drive, Baltimore 7, Maryland.

PROFESSIONAL FILMS AND AUTHORS

To assure the listing of *all* outstanding professional 16 mm. films—regardless of availability—in the forthcoming "Directory of Professional Motion Picture Films and Authors" now being compiled, all film authors are urgently requested to immediately write for film questionnaires. Other members of the profession are invited to cooperate in this endeavor by forwarding this announcement to an author or by directly providing the film title and name and address of any film author. Please send your valuable information to: Professional

Publications, Compilation Department, 2010 Kentucky Street, Lawrence, Kansas.

BIOLOGY COUNCIL

The National Research Council has established the Biology Council. It is composed of 16 members selected to cover the range from molecular to environmental biology. This group will not advise on specific questions put to them by their sponsors but will study the subjects they believe to be of paramount importance to the future development of biology.

The functions of the Biology Council are strictly advisory; the acceptance of their advice entirely voluntary. The following persons are members of the Biology Council:

Paul Weiss, Chairman, Division of Biology and Agriculture, National Academy of Sciences—National Research Council, *Chairman*

Stanley A. Cain, Professor of Conservation, University of Michigan

Jackson W. Foster, Professor of Bacteriology, University of Texas

Ralph W. Gerard, Professor of Neurophysiology, Neuropsychiatric Institute, University of Illinois

David R. Goddard, Chairman, Department of Botany, University of Pennsylvania

Richard Goodwin, Professor of Botany, Connecticut College

Caryl Haskins, Director, Haskins Laboratories, New York

Sterling B. Hendricks, Head Chemist, Division of Soil and Plant Relationships, Agricultural Research Service, United States Department of Agriculture

G. Evelyn Hutchinson, Professor of Zoology, Yale University

Berwind P. Kaufman, Department of Genetics, Carnegie Institution of Washington

Ernst Mayr, Alexander Agassiz Professor of Zoology, Harvard College

F. O. Schmitt, Chairman, Department of Biology, Massachusetts Institute of Technology

Edward L. Tatum, Professor of Biology, Stanford University

Harold B. Tuckey, Head, Department of Horticulture, Michigan State College

Sherwood L. Washburn, Chairman, Department of Anthropology, University of Chicago

Perry W. Wilson, Professor of Bacteriology, University of Wisconsin

NEWS OF OUR MEMBERS

The Society of Illinois Bacteriologists has named Professor James A. Reyniers of the University of Notre Dame as the recipient of its Pasteur Award for 1954. Dr. Reyniers, who is founder and director of Notre Dame's *Lobund* Institute, was selected "for his pioneering work in germ-free research," according to J. C. McCaffrey, award committee chairman.

Formal presentation of the Pasteur Award in the form of an engraved scroll was made to Professor Reyniers at a dinner meeting of the Society held May 22nd at the Edgewater Beach Hotel, Chicago.

The Pasteur Award was established in 1948 to honor annually an outstanding Midwest bacteriologist for his contributions to microbiology. Previous award recipients have included Dr. Forest Huddleson, Michigan State College; Dr. Stewart A. Koser, University of Chicago; the late Dr. J. Bronfenbrenner, Washington University; Dr. C, H. Werkman, Iowa State College; Dr. S. E. Luria University of Illinois; and Dr. Howard J. Shaughnessy, Illinois State Public Health Department.

The Maryland Branch of the Society of American Bacteriologists announces with pride the winners of their annual awards that are given in honor of two of their most illustrious members, J. Howard Brown and Barnett Cohen (deceased).

These awards are given in recognition for contributions, devotion, diligence, and interest in the promotion of the Science of Microbiology and are presented annually to persons in the Maryland area that are judged to most adequately fulfill these requirements.

The Barnett Cohen Award was received by Dr. Werner Braun of Camp Detrick, Frederick, Maryland, for his studies on bacterial variation.

The J. Howard Brown Award was received by Mrs. Marie Hammond Creel of the Maryland State Health Department for her work in the laboratory on the detection of Tubercle bacilli.

NEW BOOKS

Actinomycetes and Their Antibiotics. Selman A. Waksman and Hubert A. Lechevalier. Williams & Wilkins Co., Baltimore, Md. 1953. 246 pp. $5.00.

This book will be widely purchased and used by microbiologists, including virtually all of those who now concern themselves with the isolation and identification of the Actinomycetes as potential sources of new and significant antibiotics and other metabolic products. In fact, as the title suggests, and as the Preface states specifically, this little volume was compiled as a handbook for this bewildered group of investigators. The book should prove useful to them. However, it will afford only a preliminary guide, and oftentimes the reader will be disappointed at the paucity of information provided. As in the past, he will have to search original sources to secure and evaluate, as best he can, the information which he so urgently needs.

The classification scheme offered in Part I represents that of Waksman and Henrici (as presented in the Sixth Edition of Bergey's Manual, 1948) expanded to include those species which have been

published since the earlier work was written. A few species then recognized have been omitted; many more have been added. No suggestions of synonomy are given. One forward-looking step should be cited—the authors recognize that the genus *Streptomyces* can be subdivided into a limited number of broad groups, each centering around some generally accepted species.

The second part of the book consists of two keys to the actinomycetous antibiotics, followed, in alphabetical order, by brief summaries of the chief chemical and biological characteristics of each. To a marked degree, this follows the general pattern used by Benedict in his review of the actinomycetous antibiotics published earlier last year. (Bot. Rev. *9:* 229–319, 1953.) The improved format of the present work, however, allows one to grasp more readily the information which is presented.

The volume is a worth-while addition to the literature of the field, and the reviewer will keep it within easy reach. However, each time it is used, he will undoubtedly be reminded that the definitive work on the Actinomycetes must still be written.

KENNETH B. RAPER

Immunity; Hypersensitivity, Serology. Sidney Raffel. New York: Appleton-Century-Crofts, Inc.; 1953. x + 531 pp., 47 figs. $8.00

Dr. Raffel's major premise is that immunologists have become so bemused by the study of antigens, antibodies, and their interactions (which field he designates as serology) that they have tended to explain all immunity in terms of the activities of antibodies and have even overlooked the primary purpose of their discipline, which is the study of resistance, whether acquired or not, to infectious disease. That is to say, there are instances of acquired resistance not definitively attributable to antibody formation; there are numerous cases where antibody is formed abundantly to an antigen of an infectious agent but contributes little or not at all to resistance; and there are those immunological phenomena that are clearly not directly concerned with the mechanisms of resistance, such as the occurrence of blood group antibodies and the development of hypersensitivity to nonmicrobial antigens. Not that the author belittles these derivatives of immunology. As he states, "antibodies have been the object of a great deal of interest in their own right." His present purpose, however, is to make an up-to-date evaluation of *all* immunological events as they relate to resistance. Necessarily, most space had to be given to the fundamentals of antibody formation and its significance for acquired immunity. The author does justice, so far as it is possible to do so, to the mechanisms of nonacquired or native immunity and to acquired, nonantibody defense mechanisms; regrettably, there is a woeful lack of definitive formation in these areas. Hypersensitivity is presented concisely yet thoroughly and its significance for immunity is discussed. Resistance to disease is analyzed by concentrating attention on certain classic, well studied examples, from a pure intoxication that is not an infection (botulism) through bacterial diseases of varying potentialities (diphtheria, gas gangrene, pneumococcal disease, anthrax, plague, cholera, bacillary dysentery, and tuberculosis) to virus diseases (smallpox, poliomyelitis, and influenza). One hopes that in a future edition the author will include a consideration of immunity to protozoan and metazoan parasites. The inclusion of a section on serology should not mislead the prospective reader to expect another technological treatise; rather, this section is concerned with microbial antigens and toxins, cellular antigens, and blood group antigens.

This work should find a place of esteem on the immunological reference shelf. Since it is intended as a presentation of principles and, presumably with an eye on costs, is written in a rather condensed style, it is not an encyclopedia of immunological minutiae. On the other hand, the bibliographic coverage is broad but not undiscriminating. The reader will find at least one key reference to the original literature, both old and new, in answer to most of his questions. And yet, as a general observation, one wonders what serious remote consequences the economic exigencies of modern publishing are bringing on, by making it impossible for authors to give a subject the full scholarly treatment which it merits and which they are capable of giving it.

HENRY W. SCHERP

General Virology. S. E. Luria. New York: John Wiley & Sons, Inc.; London: Chapman & Hall, Ltd.; 1953. xiii plus 427 p., 93 figs., and 32 tables. $8.50.

This book is written by a pioneer in modern research in the field of bacteriophage. The author's preface states, "This book is an attempt to fulfill the need for a textbook in general virology." Dr. Luria's volume bridges the gap in knowledge existing between a brilliant group of scientists—himself, Hurst, Lwoff, Burnet, Henle et al.—on the one hand, and a large sement of rank and file virologists who, because of lack of time or inadequate preparation, are unable to grasp the significance of the rapid and profound changes taking place in the science of virology. Luria states quite justifiably that "Virology is fast becoming an important field of science, in which geneticist, cell physiologist, and biochemist find, in the ground plowed by the pathologist, a fertile soil for new approaches to fundamental problems of cell function and organization."

Although the author states that the basis for the book was "a course of virology for graduate and

advanced undergraduate students," I believe he is overoptimistic as to its usefulness to the second group, unless they are intellectually "very advanced" indeed.

The book excels in the sections dealing with Environmental Effects on Virus Particles, Virus-Host Interaction and Variation in Viruses, and there are lucid accounts of the Purification and Chemical Composition of Virus Material and the Serological Properties of Viruses. The subjects Growth of Viruses in the Chick Embryo and Transmission, Vectors and Survival of Viruses are perhaps dealt with in a more transient manner, but then the author has clearly stated in the preface that he is more interested in presenting "Facts about individual viruses—as model systems or as examples without any attempt at extensive coverage." From this point of view, the Appendix on Rickettsiae seems superfluous, and in the opinion of the reviewer the book would gain if this chapter were omitted in future editions. The pertinent material on Rickettsiae could be incorporated in other chapters dealing with more general and much more interesting topics as far as virology is concerned.

The problem of Viruses and Tumors is a complex one to incarnate in novel form, because it involves the fusion of diverse elements. Dr. Luria made a valiant attempt, but somehow this chapter leaves an oddly ambiguous impression in the mind. Perhaps this particular subject made the author go too far outside his creative range.

The book is very nicely printed and edited. The author is probably well aware of the Shavian dictum, "Science is always wrong: it never solves a problem without creating ten more." Let us hope that he will continue to deal with the "ten more" problems in future editions of his book in the same admirable way as he has now done.

HILARY KOPROWSKI

Sergei N. Winogradsky: His Life and His Work. Selman A. Waksman. Rutgers University Press, New Brunswick, New Jersey; 1953. 150 pp.

This relatively brief biography of one of the last of the early workers in the field of bacteriology will be of interest to all those seriously concerned with the field. Winogradsky's span of life, from 1856 to 1953 covered the entire period of the development of modern bacteriology. He started work in the field at an early age and continued to be active until a few months before his death.

In spite of the fact that most of the records of Winogradsky's early life were lost at the time of the first world war, the close association which the author had with Winogradsky over the last thirty years has enabled him to present a clear and understandable picture of the man and his accomplishments. One of the most interesting portions of the book consists of the rather generous use of extracts of letters which Winogradsky wrote to the author. From these letters it is possible to gain an understanding of the purposes, attitudes, and forces which shaped Winogradsky's life as an individual and determined his scientific philosophy.

I. L. BALDWIN

Autotrophic Micro-organisms. Edited by B. A. Fry and J. L. Peel. 1954. New York: Cambridge University Press. 305 pp., 29 tables and 44 figures. $5.00.

This book is a collection of thirteen papers presented at the Fourth Symposium of the Society for General Microbiology held at the Institute of Electrical Engineers, London, in April, 1954.

Not since Winogradsky's *Microbiologie du Sol* (1945) has such an authoritative collection of articles on autotrophic micro-organisms been collected in one volume. These articles deal with a wide variety of topics including classification, biology, biochemistry, and economic importance of autotrophic micro-organisms which should be of interest not only to workers in the field but also students and teachers.

The editors introduce the book by a summary of the nomenclature of nutritional types of micro-organisms based on energy sources. Woods and Lascelles review the bridge between the autotrophic and heterotrophic ways of life. Bisset and Grace discussed the relationships and autotrophic bacteria. The physiology of the Thiobacilli was reviewed by Baalsrud and the physiology of the nitrifying bacteria by Meiklejohn. Less concluded that the general biochemistry of the nitrifying bacteria is not radically different from that of the heterotrophs. Fogg and Wolfe reached the same conclusion in the nitrogen metabolism of the blue-green algae. They also discuss the role of molybdenum on the intermediate metabolism of nitrogen. Syrett reviewed the relationship of ammonia and nitrate assimilation by green algae to respiration in darkness and the effects of anaerobiosis and light on assimilation. The advances of the last few years in the mechanism of photosynthesis are presented by Gaffron. Larson, from studies on the energy relations of the photolitho-autotrophic (purple and green) bacteria, supports the general scheme for photosynthesis previously outlined by van Niel. He concluded that the chemical energy released by the oxidation of an electron-donor in a bacterial photosynthesis is not utilized for the assimilation of carbon dioxide. Elsden observed that the utilization and transformation of organic compounds by photosynthetic bacteria is similar to those mechanisms found in heterotrophic organisms. Blinks reviewed the role of the accessory pigments on photosynthesis. The economic importance of autotrophic micro-organisms was reviewed by Butlin and Postgate and the problems in their mass cultivation by Wassink.

Autotrophic micro-organisms have received far

less attention than their importance merits. Many questions of a biochemical nature remain to be solved. It is clear that problems of autotrophy will be considerably advanced in the next few years. This Symposium serves a useful purpose in summarizing recent developments arising from a renewed interest in autotrophic micro-organisms.

HARLYN HALVORSON

Les Animaux de Laboratoire (Anatomie, Particularites Physiologiques, Hematologie, Maladies Naturelles, Experimentation). By Julien Dumas. Flammarion publ., Paris 1953, 720 pp., bound, $12.—

This remarkable book should prove indispensable to all investigators—and especially so to Microbiologists—whose work involves animal experimentation. We do not know of a more comprehensive treatment of the subject in any language, yet it is presented very concisely, with constant attention to practical problems.

The first section describes the anatomy, physiological peculiarities, hematology and breeding conditions of various laboratory animals (guinea pig, rabbit, mouse, rat, hamster, ferret, spermophile, hen, pigeon, monkeys, cat and dog).

The second section contains 50 pages of valuable information on the housing and feeding of these animals, as well as on types of cages and their cleaning and disinfection.

The third section describes, in great detail, the various bacterial, viral, protozoan and helminthic diseases naturally occurring in the guinea pig, rabbit, mouse, rat, ferret, hen and monkeys. The consequences of avitaminosis, the tumors and the ectoparasites are also described.

For each disease, the author discusses the symptoms, the anatomo-pathological and histological findings, the diagnosis (with emphasis on the specific identification of the causative agent), the experimental reproduction of the disease, its epidemiology and prophylaxis.

The fourth section describes the techniques of animal experimentation: marking, handling, anesthesia, collection of samples, modes of inoculation, autopsy and sanitary disposal of the corpses.

The book contains 163 drawings, sketches and photographs and a good alphabetical index. After each chapter, there is a rather complete list of references, truly international in scope. The printing and the paper are excellent.

G. H. WERNER

Morphology and Pigmentation of Certain Yeasts from Brines and the Cucumber Plant. John L. Etchells, Thomas A. Bell and Ivan D. Jones. Reprint from Farlowia: 1953, *4:* 265–304. Free.

A study of the cellular and colonial morphology of some 30 spp. of yeasts in 12 genera is presented in a highly illustrative manner. The cultures depicted represent the principal spp. obtained from previous basic studies on: the yeast fermentation of brined vegetable material; film-forming yeasts from commercial cucumber brines; yeasts from meat brines; and, yeasts from the growing cucumber plant. Thirty-four pages of the article are devoted to pictures, including 12 pages in natural color of yeast colonies and related subjects, and 22 pages of black and white photographs consisting mostly of photomicrographs of yeast cells from different cultural media. The striking changes in pigmentation of certain spp. resulting from the influence of different cultural media, are clearly shown in natural color. Colonial growth of 17 spp. and strains of yeasts in the genus *Rhodotorula* are shown in color together with their absorption maxima for total carotenoid pigments. Chromatographic separations of the pigments from 4 spp. of *Rhodotorula* are reported; β-carotene was identified as the pigment common to these spp. This pictorial publication should interest teachers, students, and research workers in the field of microbiology.

A Practical Manual of Medical and Biological Staining Techniques. By Edward Gurr. 1953. Interscience Publishers, Inc., New York. 320 + xix pages. $4.00.

An accurate description of this book is given by the author when he states in the preface that "This book has been written because it is felt that there is an urgent need of a practical manual dealing with all or most branches of microscopic staining, entirely divorced from theory and general statements."

The book consists of six sections and an appendix. Section 1 deals with fixation, dehydration, embedding, and sectioning. Sections 2 and 3 deal, respectively, with various techniques of animal and plant histology, normal and pathological. Section 4 is labelled Cytological Methods and consists of methods of staining chromosomes and mitochondria in plant and animal cells. Section 5 is devoted to fluorescence microscopy. Section 6 deals with smear preparations such as those used in medical bacteriology and parasitology. The appendix includes atomic weights, conversion table of weights and measures, formulae of fixatives and staining solutions, refractive indices of various substances or mixtures used in histological techniques, saturated solutions of various reagents in grams per mls of water, specific gravities of various organic fluids, and, finally, a valuable table of solubilities and molecular weights of dyes.

The book will undoubtedly prove to be of value to routine workers in laboratories of public health, histology, and pathology. The scarcity of references, intended by the author because "a great deal of time is lost in searching through volumes of theory and general statements in order to extract a particular staining method which, even when found, may not be complete", limits the value of the book, as does the absence of several well known methods of bacterial cytology and electron microscopy.

GEORGES KNAYSI

Books Received

Advances in Enzymology. Volume 15. Edited by F. F. Nord. New York: Interscience Publishers, Inc. 1954. pp. x + 547. $11.00.

An Introduction to Bacterial Physiology. Evelyn Oginsky and Wayne W. Umbreit. San Francisco: W. H. Freeman and Co. 1954. 94 figs., 6 drawings, 18 tables, pp. xi + 416. Text $6.00. Trade $7.25.

Nature and the Greeks. Erwin Schrodinger. New York: Cambridge University Press. 1954. pp. 97. $2.00.

NEWS AND MEETINGS OF LOCAL BRANCHES

Northern California-Hawaii Branch (H. J. Phaff, Secretary-Treasurer)

March 12, 1954. At a meeting held at the Western Regional Research Laboratory, Albany, Calif. the following papers were presented:

1. "Studies on carotenoid biosynthesis in *Phycomyces*." G. Mackinney, Dept. of Food Technology, University of California at Berkeley.

2. "Isoleucine and Valine Biosynthesis in *Neurospora*." E. A. Adelberg, Dept. of Bacteriology, University of California, Berkeley, California.

3. "Applications of the Logistic Equation to Bacterial Metabolism." Lionel Farber, The Hooper Foundation, University of California Medical Center, San Francisco 22, California.

4. "Further Studies on the Enzymatic Differences between aerobically and anaerobically grown *Pasteurella pestis*." Ellis Englesberg and Judith B. Levy, The Hooper Foundation, University of Calinia Medical Center, San Francisco 22, California.

5. "Use of Trypsin to Demonstrate a Sporostatic Action of Subtilin." Lawrence E. Sacks, Western Utilization Research Branch, Agricultural Research Service, U.S.D.A., Albany 6, California.

6. "Studies on the Blue Tongue Virus." D. G. McKercher, School of Veterinary Medicine, University of California, Davis, California.

7. "Resistance of Species of *Clostridium* to Sorbic Acid." George K. York and Reese H. Vaughn, Dept. of Food Technology, University of California at Davis.

8. "Heat Resistance of Strains of *Salmonella* in Liquid Whole Egg, Egg Yolk, and Egg White." W. W. Osborne, R. P. Straka, and Hans Lineweaver, Western Utilization Research Branch, Agricultural Research Service, U.S.D.A., Albany 6, California.

Southern California Branch (Frances A. Hallman, Secretary-Treasurer)

April 10, 1954. The meeting was an all-day session at the Scripps Institute of Oceanography, La Jolla, Calif. Two concurrent sessions were held in the morning. Following a luncheon served in the Institute garden by the wives of the Scripps Institute microbiologists and a short business session, the general session, featuring guest speakers, was held.

The following papers were presented:

Medical Microbiology Section

1. "Preliminary Studies on the Surface Fixation Technic for the Demonstration of Antigen-Antibody Reactions." Herman Ainis, Harrison M. Kurtz, and A. S. Markowitz, Department of Bacteriology, University of Southern California, Los Angeles, Cal., and Department of Bacteriology, San Diego State College, San Diego, Cal.

2. "Effects of Vaginal Bacteria and Metabolites on the Growth of *Trichomonas vaginalis* (in vitro)." J. Jerry Lash, Research Associates Laboratory, Los Angeles, Cal.

3. "*Salmonella bredeney* Meningitis: A Case Report." Francis S. Buck, Ada Wellemeyer, Robert A. Greene, and Golda Larks, Los Angeles County Osteopathic Hospital, Los Angeles, Cal. and Department of Microbiology, College of Osteopathic Physicians and Surgeons, Los Angeles, Cal.

4. "A correlation of *in vitro* Sensitivity Studies with the Clinical Course of Infection with Antibiotic-Resistant *Staphylococcus*." Elizabeth Tamblyn, Children's Hospital, Los Angeles, Cal.

5. "Serum Polysaccharide and Protein Studies in Experimental Brucellosis." Henry E. Weimer, Jean Redlich-Moshin, Ruth A. Boak, and Charles M. Carpenter, Department of Infectious Disease,

School of Medicine, University of California Medical Center, Los Angeles, Cal.

6. "Factors Affecting Hemagglutination in the Middlebrook-Dubos Test." John E. Forney and Barbara Ghene Hartman, Department of Microbiology, School of Medicine, University of Southern California, and Department of Bacteriology, University of Southern California, Los Angeles, California.

Section on General Microbiology

1. "Studies on the Microbial Ecology of Estuaries." Dr. E. J. F. Wood, Commonwealth Scientific and Industrial Research Organization, Australia. Visiting Investigator, Scripps Institution of Oceanography, La Jolla.

2. "Behavior and Distribution of Bacteria in Crude Oil." Dr. Wilhelm Schwartz, Institute of Microbiology, Mahlum über Derneburg, Western Germany, Visiting Investigator, Scripps Institution of Oceanography, La Jolla.

3. "The Study of Pure Cultures of *Beggiatoa* species." Harold L. Scotten and J. L. Stokes. Presented by H. L. Scotten, Scripps Institution of Oceanography, La Jolla.

4. "Symbiotic Luminous Bacteria." Dr. Y. Haneda, Tokyo Jikeikai Medical College, Tokyo, Japan. Visiting Investigator, Scripps Institution of Oceanography, La Jolla.

5. "The Use of Fluorescence as a Method of Detecting Spoilage of Fish." Harry Aker and Milo D. Appleman, Department of Bacteriology, University of Southern California, Los Angeles.

6. "Colony Characteristics of *Escherichia coli* Isolated from Orange Juice." K. M. Rowell and R. L. Kitchell, Exchange Orange Products Company, Ontario.

7. "The Maintenance of Pure Yeast Cultures Through the Use of Various Antibiotics." Jack Hansen and Milo D. Appleman, Department of Bacteriology, University of Southern California.

8. "Some Preliminary Results of the Action of Hydrostatic Pressure on Aspartase Activity." Perrin Winchell, Scripps Institution of Oceanography, La Jolla.

9. "The Influence of Hydrostatic Pressure on Nitrate Reduction." Keith M. Budge, Scripps Institution of Oceanography, La Jolla.

Afternoon Session

1. "The Effects of Radiations on Microorganisms." Dr. C. A. Lawrence, L.A. County Health Department, Los Angeles.

2. "An Epizootic Disease in Dairy Cattle." Dr. R. V. McIntyre, L.A. County Livestock Department, Los Angeles.

3. "Bacteriological Problems in Food Preservation." Mr. Frank LeBlanc, American Can Company, San Francisco.

Leo F. Rettger, Connecticut Valley Branch (Kathleen Marden, Secretary)

April 23, 1954. The spring meeting of the Branch was held at St. Joseph College, West Hartford Conn. The afternoon scientific session was followed by a dinner at Mercy House at the College. After dinner Dr. George Valley talked of "Professor Rettger as I Knew Him." The program of the scientific session was as follows:

1. Tentative Identification of a Malty Aroma Substance from Milk Cultures of *Streptococcus lactis* var. *maltigenes*. H. Jackson and M. E. Morgan, University of Connecticut.

2. Preliminary Report on Serologic Relationship between strains of "*Vibrio foetus*". Edward M. Kiggins, University of Connecticut.

3. Respiratory Mechanisms in the genus Streptomyces. V. W. Cochrane, Wesleyan University.

4. Biochemical Studies on Bacteria Oxidizing Molecular Hydrogen. L. Packer, Yale University.

5. A comparative Study in the Isolation of *Mycobacterium tuberculosis* on Cultural Media and in Embryonated Eggs. G. Husing and L. D. Haley.

Society of Illinois Bacteriologists (C. J. Rickher, Secretary)

February 27, 1954. The winter meeting of the branch was held at the quarters of the Western Society of Engineers, Chicago, Illinois. The following papers were presented:

1. Mitosis in Saccharomyces. D. O. McClary and C. C. Lindegren. Southern Illinois University, Carbondale, Illinois.

2. *Bacillus endoparasiticus* in a Permanent Endoparasitism in Man. T. Benedek, Stritch School of Medicine, Loyola University, Chicago.

3. The *in vivo* Effect of Antibiotics on *Clostridium septicum* Endospores. W. I. Taylor, College of Medicine, University of Illinois, Chicago.

4. A comparison of Antibiotic Potency of Achromycin and Furadantin. D. I. Jones, Hektoen Institute, Cook County Hospital, Chicago.

5. A *Serratia marcescens* Infection in Man. R. G. Vernon and O. E. Hepler, Northern University Medical School, Chicago.

6. Properties of Catalase-negative Tetracocci from meat-curing brines. R. H. Deibel and C. F. Niven, Jr., American Meat Institute Foundation, University of Chicago.

7. Induced Alternate Fermentation Pathways in *Streptococcus faecalis*. J. T. Sokatch, University of Illinois, Urbana, Illinois.

8. Pantothenate Biosynthesis: Hydroxymethylation of alpha ketoisovalerate. M. Purko, W. O. Nelson, W. A. Wood, University of Illinois, Urbana, Ill.

9. The Bacterial Endospore as a Biological Problem. H. O. Halvorson, University of Illinois, Urbana, Illinois.

May 22, 1954. The spring meeting was held at the Edgewater Beach Hotel. The Pasteur Award Lecture was given after dinner by Dr. James A. Rayniers, Lobund Institute, University of Notre Dame, the 1954 recipient of the Pasteur Award of the Society of Illinois Bacteriologists. His address was entitled "Lobund and Germ Free Life Research—An Adventure in Basic Science". The program of the scientific sessions consisted of:

Morning Session, 10:30 A.M.—Symposium: *Metabolic Study of Virus Infection*, S. E. Luria, Convener.

1. Origin and Fate of Virus Constituents. F. W. Putnam, Biochemistry Department, University of Chicago.

2. Enzyme and Mutant Studies on Virus Synthesis. Kenneth Burton, Biochemistry Department, University of Sheffield, England and Research Associate in Biochemistry Department, Univ. of Chicago.

3. Physiological Effects of Latent Viruses. S. Lederberg, Bacteriology Department, University of Illinois.

4. Metabolic Inhibitors in Virus Infections. J. W. Moulder, Bacteriology Department, University of Chicago, 1954 Eli Lilly Award Recipient, Society of American Bacteriologists.

Afternoon Session, 2:30 P.M.

1. A Three-Dimensional Diffusion Precipitin Technic. R. K. Jennings and F. Malone*, Rheumatic Fever Research Inst., Chicago.

2. Solubilization by Physical Means of M-Protein of Group A Hemolytic Streptococcus. J. W. Hahn* and H. D. Slade, Rheumatic Fever Research Inst., Chicago.

3. Infrared Spectra of *Hansenula* and *Saccharomyces*, Cells and Cellulose. S. Simon* and L. R. Hedrick, Biology Department, Ill. Inst. of Technology.

4. Factors Affecting the Sensitivity of Pseudomonads to Gamma Radiation. E. A. Felton* and C. F. Niven, Jr., Amer. Meat Inst. Foundation, Chicago.

5. Oxidative Mechanisms in *Acetobacter suboxydans* and *Acetobacter aceti*. M. R. R. Rao, Bacteriology Department, University of Illinois.

6. An Objective Measure of Laboratory Technique for Coliform Tests. R. E. Noble*, Bureau of Water, L. R. Hedrick and M. L. Sutherland, Biology Department, Illinois Institute of Technology, Chicago.

7. The effect of Antimetabolites on Sporulation of *Bacillus Subtilis*. C. F. Schmidt, Research Division, Continental Can Co., Inc. Chicago.

8. The Effect of Traces of Fluorides on Bacteria Associated with Dental Caries. F. J. Orland* and M. A. Pannell, Bacteriology and Parasitology Department and Zoller Memorial Dental Clinic, University of Chicago.

Indiana Branch (Ona R. Whitley, Secretary-Treasurer)

May 13, 1954. The spring meeting was held at the Indiana State Board of Health Building, Indianapolis, Ind. The following officers have been elected for 1954: President, Dr. John O. MacFarland, Eli Lilly and Co., Indianapolis; Vice-President, Dr. D. N. Walcher, Indiana Medical Center, Indianapolis; Secretary-Treasurer, Miss Ona R. Whitley, State Board of Health, Indianapolis; Councilor, Dr. L. B. Schweiger, Miles Laboratories, Elkhart; Director (two years) Mr. C. L. Baldwin, Pitman-Moore Co., Indianapolis; Director (one year) Mr. Paul W. Ensminger, Eli Lilly and Co., Indianapolis.

The morning session was devoted to the address of the guest speaker, Dr. Guy P. Youmans, Department of Bacteriology, Northwestern University Medical School, Chicago, who spoke on "Experimental Chemotherapy of Tuberculosis." The afternoon scientific session consisted of:

1. The Lysozyme Spectrum of the Gram Negative Bacteria. R. G. Peterson and S. E. Hartsell, Purdue University.

2. Variability of a Non-Pathogenic Mutant of *Micrococcus pyogenes* var. *aureus*. Hedwig E. Olson and Dorothy M. Powelson, Purdue University.

3. Antibody Production in Humans Against Their Own Stored Red Cells. Merwin Moskowitz, Purdue University.

4. The Isolation of Actinophages from Soil. M. M. Hoehn, W. Sitler and J. M. McGuire.

5. Attempted Production of Allergic Encephalomyelitis with Duck Embryo Suspensions and Vaccines. J. O. MacFarlane and C. G. Culbertson.

6. Stability of Anti-Rabies Vaccines Made in Embryonated Duck Eggs. H. M. Powell and C. G. Culbertson.

Maryland Branch (C. Baxter McLaughlin, Secretary-Treasurer)

March 2, 1954. A meeting of the Maryland Branch was held at the Officers Club, Fort George G. Meade. A social session preceded the dinner which was followed by the meeting, at which Robert B. Lindberg, Lt. Col. M.S.C., Bacteriology Department, Army Medical Service Graduate School, Washington, D. C., spoke on "Bacteriologic Observations on Dysentery and on Wound Infection During the Korean War."

April 10, 1954. The meeting was held at Camp Detrick, Frederick, Maryland. The evening session was devoted to the presentation of the J. Howard Brown Award address *Some Problems in the Detection of Tubercle Bacilli in the Routine Laboratory* by Mrs. Marie Hammond Creel, Maryland State Health Department, and the Barnett Cohen Award address *Some Recent Studies Concerning the Prob-*

lems of Transformation, Resistance and Taxonomy by Dr. Werner Braun, Camp Detrick.

The afternoon session consisted of the following papers:

1. Purine Metabolism of a Chloramphenicol-Resistant Strain of Micrococcus pyogenes, var. aureus. Robert C. Wood and Edward Steers, Ph.D., School of Medicine, University of Maryland, Baltimore, Md.

2. Production, Purification, and Characterization of a Proteinase of the Okra B Strain of Clostridium botulinum. Robert C. Millonig, School of Hygiene, Johns Hopkins University, Baltimore, Md.

3. Germicidal Effectiveness of Formaldehyde Solutions Against Bacillus anthracis in Animal Tissues. G. Briggs Phillips, Frank Novak and Everett Hanel, Jr., S. Division, Camp Detrick, Md.

4. The Microbial Decomposition of 2,4-Dichlorophenoxyacetic Acid. Dr. Robert L. Walker and Dr. A. S. Newman, C. Division, Camp Detrick, Md.

5. Agglutinins in the Sera of Laboratory Workers Exposed to Serratia marcescens. Morton Reitman, M.S., Leonard S. Sutton, M.D., Robert L. Alg, William S. Miller and Noel H. Gross, Ph.D., S. Division, Camp Detrick, Md.

6. Automatic Bacterial Density Assessment. Clifford J. Maloney, Ph.D., Allied Sciences Division, Camp Detrick, Md.

7. Membrane Filter Technique and Equipment for Bacterial assay of Fluids and Air. F. M. O'Leary. PD Division, Camp Detrick.

8. New Uses of Membrane Filters. I. The De termination of Spontaneous Mutation Rate of *Escherichia coli* to Streptomycin Resistance. 2nd Lt. T. Matney. MB Division, Camp Detrick.

9. The Anaerobic Fermentation of Glucose and of Xylose by Resting Cell Suspensions of *Pasteurellapestis*. Dr. K. Higuchi and C. Carlin. BN Branch, Camp Detrick.

10. A Semi-Micro Method for the Determination of Cellular Lipide in Microorganisms. R. Anderson, J. Alleva, and Dr. N. Gary. BN Branch, Camp Detrick.

11. Demonstration of a Ferro-Aldolase in Cell Free Extracts of Sonically Disintegrated *Brucella suis*. Dr. N. Gary, L. Kupferberg, and Dr. L. Graf. BN Branch, Camp Detrick.

Michigan Branch (Elizabeth J. Cope, Secretary-Treasurer)

May 19, 1945. The spring meeting was held in the Auditorium of the East Medical Building, University of Michigan, Ann Arbor, Michigan. The scientific program, consisting of the following papers, was preceded by a dinner at the Michigan League.

1. New Method of the Evaluation of Skin Disinfectants. M. W. Fisher, Parke Davis and Co.

2. Phytoagglutinins on the Flexner-Jobling Carcinoma of Rats. W. J. Nungester, G. Van Halsema and B. Varney, University of Michigan.

3. Skin Test Antigens from yeast-phase cells of *Histoplasma capsulatum* and *Blastomyces dermatitidis*. James E. Dyson and E. Edward Evans, University of Michigan.

4. Studies on Toxins of Pathogenic Fungi. Kenneth W. Walls and E. Edward Evans, University of Michigan.

5. Physical and Chemical Properties of Purified Poliomyelitis virus. A. R. Taylor, A. E. Hook, I. W. McLean and F. D. Stimpert, Parke Davis and Co.

6. Chronic Hog Cholera. Frank Thorpe, Jr., M. L. Gray and H. W. Dunne, Michigan State College.

7. A comparison of Gamma Radiation and Heat Sterilization of Lactic Acid Fermentation Media. R. A. Gillies and Lloyd L. Kempe.

Eastern Missouri Branch (Lucille K. Schultze, Secretary-Treasurer)

February 22, 1954. The fifty-fourth meeting of the Branch was held at the Fifth Army Area Laboratories, St. Louis. Following a tour of the Fifth Army Area Laboratories Dr. Theodor Rosebury, Department of Bacteriology, Washington University School of Dentistry, spoke on "A Bacteriologist Looks at Fluoridation." This paper was discussed by the Health Commissioner of St. Louis, Dr. J. Earl Smith and by Dr. P. Ferrillo, St. Louis University School of Dentistry.

March 20, 1954. The fifty-fifth meeting of the Branch was held at the Memorial Students Union of the University of Missouri, Columbia, Mo. The scientific session consisted of the following papers by members of the University faculty.

1. Studies on the Ring Test for Brucellosis. J. Edmonson and K. L. Tallman, Dairy Bacteriology.

2. Bacteriological Studies on Pre-Packaged Meats. R. F. Brooks, Food Bacteriology.

3. Pseudomonas Infections in the Chinchilla. P. M. Newberne, Veterinary Bacteriology.

4. Use of Antibiotics in Bacterial Plant Diseases. R. N. Goodman, Horticulture.

Missouri Valley Branch (Carl E. Georgi, Secretary-Treasurer)

April 2 and 3, 1954. The annual meeting of the branch was held at the University of Kansas, Lawrence, Kansas. The following officers were elected for 1954–55; President, Frank Victor, Kansas State Department of Health, Topeka, Kansas; Vice-President, Thomas M. McCalla, University of Nebraska, Lincoln, Nebraska; Secretary-Treasurer, John O. Harris, Kansas State College, Manhattan, Kansas; Councilor, C. A. Hunter,

Kansas State Department of Health, Topeka, Kansas. The scientific program follows:

1. Inhibition of specific hemagglutination by extracts of *Bacterium tularense* and tissues from infected animals. Cora M. Downs, Irene Dyke and Carol Rausch, Department of Bacteriology, University of Kansas, Lawrence, Kansas.

2. The use of hemagglutination-inhibition and complement fixation tests in the rapid diagnosis of experimental infections with *Rickettsia mooseri*. James R. Fevurly, Miriam M. Meyer and Cora M. Downs, Department of Bacteriology, University of Kansas, Lawrence, Kansas.

3. A test for antigens in the typhus infected animal which are common to the typhus richettsia and Proteus OX19. G. C. Taylor and Cora M. Downs, Virus Laboratory, Department of Bacteriology, University of Kansas, Lawrence, Kansas.

4. Studies on the infectious mononucleosis I. Relation of the white cell count to the Paul-Bunnell test. Paul Little, Cora M. Downs, Virginia E. Detlor and Ralph I. Canuteson, Department of Bacteriology and the University Health Service, University of Kansas, Lawrence, Kansas.

5. The effect of trypsin on the pathogenesis of tuberculosis. Warren E. Engelhard, J. M. Birkeland and H. Reiser, Department of Bacteriology, Ohio State University, Columbus, Ohio.

6. Growth of pathogenic bacteria in soluble oil emulsions. Hilliard Pivnick, Warren E. Engelhard and Thomas L. Thompson, Department of Bacteriology, University of Nebraska, Lincoln, Nebraska.

7. Studies on locally isolated strains of influenza virus. Lendell A. White, Ralph I. Canuteson, Cora M. Downs, Paul A. Little and Virginia Detlor, Department of Bacteriology and the University Health Service; University of Kansas, Lawrence, Kansas.

8. Electrophoretic detection of bacterial variants. John O. Harris, Kansas State College, Manhattan, Kansas.

9. Lysogenicity in *Xanthomonas pruni*. A. Eisenstark, L. B. Bernstein and S. S. Goldberg, Kansas State College, Manhattan, Kansas.

10. Amino acid stimulation of *E. coli* phage, T_1 multiplication. L. W. Fleming and E. L. Treece, Department of Bacteriology, University of Kansas, Lawrence, Kansas.

11. Evidence for the "incomplete" stage of Newcastle virus. M. K. Nadel and A. Eisenstark, Kansas State College, Manhattan, Kansas.

12. The microbiology of dirty eggs treated in various ways and stored at different temperatures and humidities. W. A. Miller (with the technical assistance of Byron S. Johnson) Kansas State College, Manhattan, Kansas.

13. Studies on cottage cheese at the consumer level. V. D. Foltz, Department of Bacteriology, W. H. Martin and W. D. Rutz, Department of Dairy Husbandry, Kansas State College, Manhattan, Kansas.

14. Pustule formation by lactobacilli in fermented vegetables. Thomas L. Thompson, Warren E. Engelhard and Hilliard Pivnick, Department of Bacteriology, University of Nebraska, Lincoln, Nebraska.

Banquet

Guest Speakers

Dr. Roger Reid, Office of Naval Research, Washington, D. C. "Trends in Microbiology"

Dr. R. Q. Brewster, Department of Chemistry, University of Kansas "Egypt—Pictures and Comments"

15. Studies on the pigments produced by *Proactinomyces ruber*. L. D. Welton and David Paretsky, University of Kansas, Lawrence, Kansas.

16. The use of carboxy-methyl-cellulose in the cultivation and study of cellulose digesting bacteria. R. G. Garrison, Kansas State College, Manhatten, Kansas.

17. The utilization of carbon compounds by *Nocardia* species. Norvel M. McClung, Department of Botany, University of Kansas, Lawrence, Kansas.

18. Some factors affecting succinic acid formation by *Escherichia coli*. M. N. Mickelson, Chemistry Division, Midwest Research Institute, Kansas City 2, Missouri.

19. The effect of diacetyl on the growth of microorganisms. L. W. Hedgecock, Research Laboratory and Radioisotope Unit, Veterans Administration Hospital, Kansas City, Missouri and D. V. Cohn, Departments of Microbiology and Pharmacology, University of Kansas Medical Center, Kansas City, Kansas.

20. Studies on the chemical composition of a bacterial polysaccharide containing uronic acids and a pentose. Carl E. Georgi and Herbert Ginoza, Department of Bacteriology, University of Nebraska, Lincoln, Nebraska, and Don H. Larsen, Department of Bacteriology, Brigham Young University, Provo, Utah.

21. The role of surface phenomena in nitrification. P. L. Gainey and S. S. Goldberg, Kansas State College, Manhattan, Kansas.

22. Nuclear activity in *A. aerogenes*. H. L. Chance, Department of Plant Sciences, University of Oklahoma, Norman, Oklahoma.

New Jersey Branch (Marjorie Darken, Secretary)

March 18, 1954. The meeting was held in the Library Building of Squibb Division, Mathieson Co., New Brunswick. The following papers were presented:

1. Formation of High Molecular Substances by Non-proliferating Bacteria. Alan W. Bernheimer, Department of Microbiology, N.Y.U. College of Medicine, New York.

2. Enzymatic Oxidation of Ascorbic Acid by *Physarum polycephalum*. John M. Ward, Department of Microbiology, Rutgers University.

April 22, 1954. This meeting was held at Lipman Hall, College of Agriculture, Rutgers University. The following papers comprised the scientific program.

1. Studies on Surface Phagocytosis. (Illustrated by time-lapse cinematography). Edwin M. Lerner II, Chief, Pathology Branch Chemical Corp Biological Laboratories, Camp Detrick.

2. Morphological Changes in *E. coli* under the Influence of Antibacterial Substances. (a film). Phillip C. Eisman, Director, Microbiological Research, Ciba Pharmaceutical Products, Inc., Summit, N. J.

May 20, 1954. The picnic-supper meeting of the Branch was held at Princeton University. The following papers were presented:

1. Electron Microscopy of Ultra-thin Sections of Bacteria. George B. Chapman, Princeton University and RCA Research Laboratories.

2. Effect of Antibiotic and other Materials on Virus Infections in Intact Plants. Reed A. Gray, Merck and Co., Inc.

3. Use of Hyperimmune Antiserum Concentrates in Experimental Equine encephalomyelitis. Carl J. DeBoer, Arthur Cadilek and Shirley Walters, Ciba Pharmaceutical Products, Inc.

4. Translocation of Chloramphenicol and Streptomycin in Higher Plants. David Pramer, Rutgers University.

5. Control of Bacterial Wilt of Chrysanthemums with Streptomycin. R. S. Robison and R. L. Starkey, Rutgers University.

Central New York Branch (Erwin Neter, Secretary-Treasurer)

May 29, 1954. The sixty-sixth semi-annual meeting of the Branch was held at the University of Rochester School of Medicine and Dentistry, Rochester. The following program was presented:

1. The Embryonated Chick Egg in the Diagnostic and Controlled Isolation of *Mycrobacterium tuberculosis*. Marvin B. Rodney, Veterans Administration Hospital, Buffalo. (15 minutes)

2. Acid Formation on Tooth Surfaces. Thomas G. Ludwig, Eastman Dental Dispensary, Rochester.

3. Production and Hyaluronidase and Beta-Glucuronidase by Viridans Streptococci Isolated from the Gingival Crevice. Henry W. Scherp and Stig D. Schultz-Haudt, University of Rochester, Rochester.

4. Recent Trends in Bovine Vibriosis Research. D. E. Hughes, New York State Veterinary College, Cornell University, Ithaca. (15 minutes)

5. Sporulation in Thermophilic Bacteria. A Preliminary Report. Donald Lundgren, Syracuse University, Syracuse.

6. A Quantitative Study of the Feulgen Reaction in Bacteria. H. Adler, N. C. Dondero and M. R. Zelle, Laboratory of Bacteriology, Cornell University, Ithaca.

7. Studies of Phages for *Micrococcus lysodeikticus*. Elizabeth Burgi and H. B. Naylor, Laboratory of Bacteriology, Cornell University, Ithaca.

8. The Use of Tissue Culture for the Rapid Diagnosis of Poliomyelitis. S. S. Kalter and J. E. Prier, State University of New York at Syracuse.

9. Characterization of a Pyrimidine in Mouse Urine by Means of Bacterial Mutants. Robert Guthrie, Roswell Park Memorial Institute, Buffalo.

10. Selenomonas Boskamp, 1922—A Genus Placed in Spirillaceae that Includes Species Showing an Unusual Type of Lateral Flagellation. Erwin F. Lessel, Jr. and R. S. Breed, New York State Agricultural Experiment Station, Geneva.

11. Study of *Escherichia coli* Cross-infections in Infants. S. J. Koegler, Kitchener, Ontario.

12. A Hemagglutination Test for the Demonstration of *Shigella sonnei* Antibodies. Erwin Neter and Rosalie M. Gino, Children's Hospital and University of Buffalo, Buffalo.

13. The Financial Status of the Society of American Bacteriologists. James M. Sherman, Cornell University, Ithaca.

14. Bacterial Viruses from the Viewpoint of a Geneticist. A. H. Doermann, University of Rochester, Rochester.

New York City Branch (E. M. Weber, Secretary-Treasurer)

March 30, 1954. The sixty-sixth meeting of the Branch was held at the Cornell Medical College, York Avenue at 69th St. The following papers comprised the scientific program:

1. Abnormal Capsular Transformation in Pneumococci. Sam M. Beiser, College of Physicians, Columbia University.

2. Non-Mendelian Inheritance in the Green Alga *Chlamydomonas*. Ruth Sager, The Rockefeller Institute for Medical Research.

3. Intracellular Enzymatic Activity of Influenza Viruses. R. Walter Schlisinger and H. Valery Karr, Public Health Research Institute of the City of New York, Inc.

Northeast Branch (Alice T. Marston, Secretary-Treasurer)

April 2, 1954. The spring meeting consisted of the following program:

1. Notes on Anthrax in Massachusetts. Edwin R. Guise, Jr. and Curtis Ross, Tufts Medical School.

2. Alteration in Fecal Flora of Man Following Oral Aureomycin. Wei-Ping Loh, Quincy City Hospital and Boston University School of Medicine.

3. The Relative Action of Oxytetracycline on Actively Growing and Resting Suspensions of Bacteria. Ernst H. Beutner, Samuel W. Warren and Howard C. Lind, Sias Research Laboratories, Brooks Hospital.

4. The Leptospira—ESS. R. Shih-man Chang and Dorothy E. McComb, Harvard School of Public Health.

Dinner Session—Some Effects of Antibodies and Antibiotics on Enteric Bacteria.

Northwest Branch (Elizabeth R. Hall, Secretary-Treasurer)

April 9th and 10th, 1954. At the annual meetings of the Branch, held at Spokane, Washington, the following officers were elected for the 1954–55 term: President, Dr. R. E. Hungate, Pullman, Washington; Vice-President, Dr. Neal Groman, Seattle, Washington; Secretary-Treasurer, Dr. Elizabeth R. Hall, Pullman, Washington; Councilor 1945–56, Dr. C. A. Evans, Seattle, Washington. Dr. Evans was unable to serve in this office; a new councilor will be elected at the next meeting.

At the scientific session the following papers were presented:

1. Further studies on the oxidation of glucose by *Saccharomyces cerevisiae*. Norman Eaton and H. P. Klein, Department of Microbiology, University of Washington School of Medicine.

2. Studies on the incorporation of labeled glucose into yeast constituents. H. P. Klein and John Murphy, Department of Microbiology, University of Washington School of Medicine.

3. Oxydation of tricarboxylic acid cycle intermediates by streptomyces species. Earl Butterworth and C. M. Gilmour, Department of Bacteriology and Hygiene, Oregon State College.

4. Crystallization and properties of amylase of *Pseudomonas saccharophila*. Alvin Marovitz and H. P. Klein, Department of Microbiology, University of Washington School of Medicine.

5. Utilization of various nitrogen compounds by selected streptomyces species. Yoko Okano and C. M. Gilmour, Department of Bacteriology and Hygiene, Oregon State College.

6. Thin sectioning of yeast and bacteria for study with the electron microscope. Hilde D. Agar, Department of Microbiology, University of Washington School of Medicine.

7. An electron microscope study of toxoplasma. Paul V. Gustafson, Hilda D. Agar, and Dorothy I. Cramer, Department of Microbiology, University of Washington School of Medicine.

8. The inhibition of the development of Lee influenza virus in the chick embryo by canavanine. K. S. Pilcher, K. F. Soike, and E. J. Folston, Department of Bacteriology and Hygiene, Oregon State College.

9. Poliomyelitis virus in the spinal cord of mice during prolonged incubation times. Kenneth R. Cundy, Department of Microbiology, University of Washington School of Medicine.

10. A simple motorized device to facilitate the spreading of inocula over agar surfaces. Marshall L. Snyder and Cecil K. Claycomb, Departments of Bacteriology and Biochemistry, University of Oregon Dental School.

11. The effect of DDT and some other soil insecticides on soil microorganisms and their activity. W. B. Bollen, Department of Bacteriology and Hygiene, Oregon State College.

12. Utilization of carbohydrate intermediates and amino acids by *Vibrio fetus*. James K. Alexander, Veterinary Research Laboratory, Montana State College.

13. Response of Lactobacillus leichmannii to Vitamin B_{12} in synthetic media. Owen B. Weeks and Marlene M. Yragui, A. C. Wiese, Department of Bacteriology, and Department of Agriculture Chemistry, University of Idaho.

Ohio Branch (D. T. Maunder, Secretary)

April 10, 1954. A meeting of the branch was held at Ohio University, Athens, Ohio at which the following papers were presented.

1. A New *Escherichia coli* Serotype Isolated during an Outbreak of Diarrhea among Infants. Edward W. Walters, Helen M. Keller and Merlin L. Cooper, The Children's Hospital Research Foundation, Cincinnati.

2. Abortion in Cattle and Swine Associated with Leptospirosis. E. H. Bohl and T. E. Powers, Department of Bacteriology, The Ohio State University, Columbus.

3. A Quantitative Study of Penicillinase Activity. A. C. Lorenzen and L. L. Nisonger, Department of Microbiology, The Wm. S. Merrell Company, Cincinnati.

4. Cellulolytic Activity of some Molds Isolated from Sewage and Polluted Water. William Bridge Cooke, Bacteriology Section, Sanitary Engineering Center, U.S.P.H.S., Cincinnati.

5. Preliminary Observations on the Effect of Sodium Dehydroacetate on Glycolysis. R. E. Gillis, Department of Microbiology, School of Medicine, Western Reserve University, Cleveland.

6. The Influence of Light Intensity and Nitrogen Nutrition during Growth on H_2 Metabolism in *Rhodospirillum rubrum*. Harvey Stiffler, Department of Microbiology, School of Medicine, Western Reserve University, Cleveland.

7. Reduction of Nitrate by some Common Bacteria. James V. Lawrence, Department of Zoology, Ohio University, Athens.

Eastern Pennsylvania Branch (Theodore G. Anderson, Secretary-Treasurer)

March 23, 1954. The 241st meeting of the Branch was held at the Philadelphia County Medical Society Building. The program was as follows:

1. The Cytology of *C. diphtheriae.* John C. Davis and Stuart Mudd, School of Medicine, University of Pennsylvania.

2. Manganese and the Proteolytic Activity of *Bacillus* megatherium Spore Extracts in Relation to Germination. H. S. Levinson and M. G. Sevag, School of Medicine University of Pennsylvania and Pioneering Research Laboratories, United States Army Quartermaster Corp., Philadelphia.

3. Chelation in Microbiology. Albert Schatz, Nicholas D. Cheronis and Vivian Schatz, National Agricultural College, Farm School, Pa. and Brooklyn College, Brooklyn, N. Y.

April 27, 1954. The 242nd meeting of the Branch was held at the Philadelphia County Medical Society Building. The following papers were presented:

1. The Turbidimetric Determination of Bacterial Gelatinase Activity. Harry Smith, Jefferson Medical College, Philadelphia.

2. Studies on the Antigenic Components of Strains of Heterofermentative Lactobacilli. Ned B. Williams and Eva Blau, School of Dentistry, University of Pennsylvania.

3. The Biochemical Treatment of Dairy Wastes by Aeratron. Nador Porges, Eastern Regional Branch, U. S. Department of Agriculture, Wyndmoor, Pa.

May 25, 1954. The 243rd meeting of the Branch was held at the Philadelphia County Medical Society Building. The scientific session was devoted to "Recent Advances in Immunology" and consisted of the following papers:

1. Bacterial Diseases. Kenneth Goodner, Jefferson Medical College, Philadelphia.

2. Viral Diseases. Morton Klein, Temple University School of Medicine, Philadelphia.

3. Use of Live Vaccines in Veterinary Medicine. Raymond Fagan, New Bolton Center, University of Pennsylvania.

Southeastern Branch (William P. Van Eseltine, Secretary-Treasurer)

April 23rd and 24th, 1954. The annual meeting of the Branch was held at the Roosevelt Hotel, Jacksonville, Florida, at which time the following officers were elected: President, Dr. John W. Foster, Athens, Ga.; Vice-President, Dr. Margaret Green, Tuscaloosa, Ala.; Secretary-Treasurer, Dr. William P. Van Eseltine, Athens, Ga.; Councilor, Dr. A. L. Kleckner, Athens, Ga. The program for the two day meeting follows:

Roosevelt Hotel, April 23, 1954. Morning Session 8:00–12:00 Noon, Grand Ballroom.

1. Welcome, Mildred Jeffries, President Southeastern Branch Society of American Bacteriologists.

2. The Isolation of Alcaligenes Faecalis from a Patient with a Protracted Low Type Fever. W. R. Carroll, University of Florida, Gainesville, Florida.

3. A Study of a Group of Gram Negative Bacteria Resembling the Tribe Mimeae of De Bord. Mary Ann Aiken, Martha K. Ward, and Elizabeth O. King, Communicable Disease Center, Atlanta, Georgia.

4. Epidemic Dysentery in a Large Colony of Primates. E. Charlton Prather, Mildred M. Galton, and A. V. Hardy, Florida State Board of Health, Jacksonville, Florida.

5. The Species of Erysipelothrix. George C. Langford, Jr., and P. Arne Hansen, University of Florida, Gainesville, Florida, and University of Maryland, Frederick, Maryland, respectively.

6. The Effect of Bacteriolytic Compounds upon Fungi. Charles H. Carter and Anne L. Pates, Florida State University, Tallahassee, Florida.

7. The Effect of Some Bacteriolytic Agents on Beta Hemolytic Streptococci. Helen Liles Casey and Anna L. Pates, V. D. Research Laboratory, USPHS, Chamblee, Georgia, and Florida State University, Tallahassee, Florida, respectively.

8. The Diacetyl Test and Its Application for the Control of Bacterial Spoilage of Citrus Concentrates. Elmer C. Hill, Florida Citrus Experiment Station, Lake Alfred, Florida.

Afternoon Session 1:30–5:00 P.M., Grand Ballroom.

1. Investigation of the Fungicidal and Bactericidal Effects of Various Substances Used or Proposed for Use in Otitis Externa. Ralph McBurney and Mary Anne Gulledge, Medical College and School of Dentistry, University of Alabama, Birmingham, Ala.

2. Mycological Techniques in the Clinical Laboratory. William Blum, Clinical Laboratory, MacDill Air Base, Florida.

3. The Effect of Menadione on Certain Dairy Microorganisms. H. H. Wilkowske and W. A. Krienke, University of Florida, Gainesville, Florida.

4. Evaluation of Certain Factors Affecting the Titers of the Weil-Felix Test. J. H. Schubert, Lillian Holdeman and D. S. Martin, Communicable Disease Center, Chamblee, Georgia.

5. Reduction of Coliform Organisms in Trickling Filters. D. C. Busciglio, University of Florida, Gainesville, Florida.

6. Electrophoretic Comparisons of Various Brucella Fractions. John W. Foster, University of Georgia, Athens, Georgia.

7. Histamine Sensitivity in Pertussis-Inoculated Mice. Leon S. King, Medical College of South Carolina, Charleston, South Carolina.

Business Meeting.

Banquet and Entertainment, Friday Evening, 7:00 P.M., Roosevelt Hotel—Grand Ballroom.

Roosevelt Hotel, April 24, 1954. Morning Session 8:00–12:15 P.M., Grand Ballroom. Joint General Session, S.A.B. and F.S.M.T.

1. Invocation. Dr. James A. Stewart, Riverside Baptist Church. Presiding. Dr. Albert V. Hardy.

2. The Present Status of the New Laboratory Tests for Syphilis. Sidney Olansky, Venereal Disease Research Laboratory, USPHS, Chamblee, Georgia.

3. The Use of Tissue Culture Methods for the Isolation and Identification of Poliomyelitis. Nathan J. Schneider, University of Pittsburgh, Pittsburgh, Pennsylvania.

4. Airborne Bacteria: A Problem of Sampling. Max E. Tyler, University of Florida, Gainesville, Florida.

5. Rabies in Bats in Florida. H. D. Venters, Florida State Board of Health Laboratory, Tampa, Florida.

6. The National "Inter-Society" Committee on Laboratory Services. A. V. Hardy, Florida State Board of Health, Jacksonville, Florida.

7. The Program for Medical Technologists and Medical Laboratories in California. Howard L. Bodily, Division of Laboratories, California State Department of Health.

Texas Branch (R. P. Williams, Secretary-Treasurer

May 28–29, 1954. The spring meeting of the Texas Branch was held in the Memorial Student Center of Texas A and M College, College Station, Texas. Dr. Paul S. Prickett, Mead Johnson and Company, gave the I. M. Lewis lecture following the banquet. His topic was "Influence of the U. S. Pure Food and Drug Laws on Food Microbiology." Two scientific sessions were held, one Friday afternoon and the other Saturday morning. The following papers were presented:

1. Preliminary investigations of the mineral nutrition of *Clostridium botulinum*. L. E. Bowers and O. B. Williams, Department of Bacteriology, University of Texas, Austin.

2. Oxidation-reduction potentials in cultures of *Clostridium botulinum*. A. I. Laskin and O. B. Williams, Department of Bacteriology, University of Texas, Austin.

3. Role of thermo treatment of phosphate-buffered glucose in germination of Clostridium spores at 75° C. L. I. Galyen and E. Staten Wynne, Division of Experimental Pathology, University of Texas M. D. Anderson Hospital for Cancer Research, Houston.

4. Comparative nucleoprotein phosphorus content of vegetative cells and spores of *Bacillus anthracis*, virulent and avirulent, and *Bacillus cereus*. E. O. Bennett and R. P. Williams, Department of Biology, University of Houston and Department of Microbiology, Baylor Medical School, Houston.

5. Survival times of bacteria in heavy and emulsion type cutting oils. H. O. Wheeler and E. O. Bennett, Department of Biology, University of Houston, Houston.

6. Effect of induced aureomycin resistance on the removal of vitamin B_{12} from culture medium by an intestinal isolate of *Escherichia coli*. Glen E. Peterson, Department of Biology, University of Houston, Houston.

7. Stimulation of soil microorganisms by antibiotics. R. J. Hervey, Texas Agricultural Experiment Station, Temple.

8. Some aspects of cellulose decomposition. T. P. O'Barr, Orville Wyss and V. L. Frampton, Department of Bacteriology, University of Texas, Austin.

9. Motile colonies of *Bacillus alvei* (?). W. L. Tidwell, Department of Biology, A & M College, College Station.

10. Infectious synovitis of chickens. F. K. Wills, Department of Veterinary Research, Texas Agricultural Experiment Station, College Station.

11. Diphtheria toxin-antitoxin reactions within the "equivalence" zone. E. B. Blair and V. T. Schuhardt, Pathological Microbiology Laboratory, Clayton Foundation and Department of Bacteriology, University of Texas, Austin.

12. The plate complement fixation test with leptospiral antigens. R. M. Pike, H. B. Owens, and Winona Humes, Department of Microbiology, Southwestern Medical School, University of Texas, Dallas.

13. Immunologic effects of homologous fetal antigen on tumor susceptibility. J. D. Flintjer and R. B. Mefferd, Jr., Southwest Foundation for Research and Education, San Antonio.

14. A black *Candida* isolated from a case of Hodgkin's disease, E. Staten Wynne and Cora L. Gott, Division of Experimental Pathology, University of Texas M. D. Anderson Hospital for Cancer Research, Houston.

15. Some aspects of the bat rabies problem in Texas. J. E. Grimes, Thelma D. Sullivan and J. V. Irons, Texas State Department of Health, Austin.

16. Recent findings on ornithosis as an occupational disease in poultry dressing establishments. J. V. Irons and Thelma D. Sullivan, Texas State Department of Health, Austin.

17. Alteration in susceptibility of mice to Coxsackie virus infection by use of foster mothers. S. E. Sulkin, A. Behbehani, and H. C. Wallis, Department of Microbiology, Southwestern Medical School, University of Texas, Dallas.

18. Development of a method for detecting nonlethal viral infections in chick embryos. Morris Pollard and Loraine Turck, Department of Public Health and Preventive Medicine, University of Texas Medical Branch, Galveston.

19. *In vitro* effects of diamox on sulfonamide and antibiotic activity, F. B. Engley, Jr., Rose Marie Steeg and Arthur Ruskin, Departments of

Bacteriology and Medicine, University of Texas Medical Branch, Galveston.

20. Inhibitory effects of salicylate derivatives against fungi. J. B. Nash, J. K. Schoening and J. D. Archer, Department of Pharmacology and Toxicology, University of Texas Medical Branch, Galveston.

21. Microorganisms in acid coal mine waters. Kenneth Temple, The Texas Company, Bellaire.

Washington Branch (Bernice Eddy, Secretary-Treasurer)

March 18, 1954. The 197th meeting of the Branch was held jointly with the Washington Academy of Sciences at the Cosmos Club. Dr. Henry Welch, Director, Division of Antibiotics, Food and Drug Administration, Department of Health, Education, and Welfare spoke on "Antibiotics in 1954."

March 23, 1954. The 198th meeting of the Branch was held at the Army Medical Service Graduate School. The following program was presented:

1. Studies on the Nitrogen Metabolism of Bovine Rumen Bacteria. F. M. Sirotnak, R. N. Doetsch, R. E. Brown, and J. C. Shaw, Departments of Bacteriology and Dairy Husbandry, University of Maryland.

2. Typhoid Fever in Chimpanzees Infected Orally with *Salmonella typhosa*. Geoffrey Edsall, Sidney Gaines, Maurice Landy and William Tigertt, Immunology Division, A.M.S.T.S.

3. Studies on the Growth of the Yeast Phase of *Histoplasma capsulatum*. Leo Pine, Laboratory of Infectious Diseases, National Institute of Health.

NEW MEMBERS

New Active Members

February 9th–June 29th, 1954

Adye, Jimmy C., 128 Pierce St., West Lafayette, Indiana

Agnew, Robert R. A., Department of Bacteriology, Pathological Institute, University Avenue, Halifax N. S., Canada

Aker, Harry T., Laboratory, Seaside Memorial Hospital, 1401 Chestnut Ave., Long Beach 13, Calif.

Akiba, Tomoichiro, Dept. of Bact., Sch. of Medicine, Univ. of Tokyo, Tokyo, Japan

Alexander, Aaron D., 2510 41st St., N.W., Washington 7, D. C.

Alexander, Nellie C., 502 West 149th St., Apartment #2, New York 31, N. Y.

Allen, Emma G., Station Road, Newport, N. J.

Allen, Grace A., Lederle Laboratories, Pearl River, N. Y.

Amos, Harold, Dept. of Bact. & Immunology, Harvard Medical School, 25 Shattuck St., Boston 15, Mass.

Andrews, Arthur W., Jr., Apartment 9, Stewart Manor, Motter Ave., Frederick, Md.

Astrachan, Lazarus, Dept. of Biochem., Sch. of Hygiene & Pub. Hlth., Johns Hopkins Univ., 615 North Wolfe St., Baltimore 5, Md.

Atherton, Phyllis J., 1438 Forest Hill, Flint 4, Mich.

Azcarate-S, Edmundo, Jose Ma Rico 611, Mexico 12, D. F., Mexico

Bachelis, Elizabeth, 105 Elliot Place, Bronx 52, N. Y.

Barkulis, Sam S., Univ. of Ill. Coll. of Med., Dept. of Biological Chem., 1853 W. Polk St., Chicago 12, Ill.

Barratt, Raymond W., Dept. of Biology, Stanford, Calif.

Barreto, Albert, Jr., 204-T Flavet III, Gainesville, Florida

Bates, Mary E., 300 Oakland Ave., Pittsburgh 13, Penna.

Bauer, Dietrich C., 725 Augusta Ave., Elgin, Illinois

Beninato, Leo P., Univ. of Massachusetts, Paige Laboratory, Amherst, Mass.

Bentley, Ronald, School of Public Hlth., University of Pittsburgh, Pittsburgh 13, Penna.

Bergstresser, Kenneth A., 41 Hampton Ave., Hellertown, Pa.

Bernstein, Aleck, Department of Genetics, University of Wisconsin, Madison 6, Wisconsin

Blasio, Mary de, E. R. Squibb & Sons, Dept. of Chomo. Therapy, Georges Road, New Brunswick, N. J.

Bonestell, Aileen E., Dept. of Bacteriology, University of Calif., Berkeley, Calif.

Boone, Irene Uhrik J., 2297 B North Road, Los Alamos, New Mexico

Brooks, William R., 626½ South Flood, Norman, Oklahoma

Burdette, Robin I., 3158 44th Place, Sandia Bose, Albuquerque, New Mexico

Buzanis, Theodore C., 2001 West 77th St., Los Angeles 47, Calif.

Cappiello, Vincent P., 104–28 106th Street, Ozone Park, Long Island 17, New York

Carbonniere, John G., 1010 West 130th Street, Gardena, Calif.

Carroll, Mary Ellen, 937 Fallowfield Ave., Charleroi, Penna.

Carter, Gordon G., 839 Mississippi St., Lawrence, Kansas

Cass, Abraham, University of Connecticut, Wood Hall, Storrs, Conn.
Castellano, Peter, 607 E. Palm Ave., Tampa, Fla.
Chambers, Dorothy B., 212 145th Street, Oregon City, Oregon
Chang, Gilbert C. H., Dept. of Biology, University of Akron, Akron 4, Ohio
Chavez, Hernandez Arturo, Rubi 25 Col Estrella, Mexico, D. F., Mexico
Chmura, Norman W., P. O. Box 68, Durham, N. H.
Chuker, Melvin S., 1150 98th St., Bay Harbor Island, Miami Beach 41, Fla.
Church, Brooks D., Department of Bacteriology, East Medical Building, University of Michigan, Ann Arbor, Mich.
Claridge, Charles, Res. & Development, Merck & Co., Inc., Rahway, N. J.
Cohen, Jay O., 242-C Flavet III, Univ. of Florida, Gainesville, Fla.
Cole, Robert D., Addison H. Gibson Lab., Sch. of Med., Univ. of Pittsburgh, Pittsburgh, Penna.
Collier, Robert E., Department of Bacteriology, University of Illinois, Urbana, Illinois
Conalty, Michael L., Laboratories Medical Research, Council of Ireland, Trinity College, Dublin, Ireland
Constantino, John J., 1936 Rosemary Hills Drive, Apt. 1, Silver Spring, Md.
Cordoba, Felix, V., E. A. Poe 314, Mexico 5, D. F., Mexico
Cormack, Paul M., 541 Ostrum Avenue, Syracuse, New York
Cornish, John E., Plymouth County Hospital, South Hanson, Mass.
Cotton, Cornelia M., Live Stock Sanitary Serv., University of Maryland, College Park, Maryland
Cramer, Marian L., Dept. of Bact. & Parasitology, Univ. of Texas Med. Branch, Galveston, Texas
Creel, Marie H., 3028 E. Baltimore Street, Baltimore 24, Maryland
Crockett, Jerry J., 2117 Mary, Ponca City, Okla.
Cunningham, Charles H., Dept. of Bact. & Public Health, Michigan State College, East Lansing, Mich.
Costa, Laurenio Teixeira da, S. E. S. P., Caixa Postal 621, Belem Para, Brazil, S. A.
Dasinger, Bruce L., 309 North Mills Street, Madison, Wisconsin
Davies, Newell A., P. O. Box 00, Nipomo, Calif.
DelaTorre, Celia, Marcos Cassillo 29, Colonia Vista Alegne, Mexico 8, D. F., Mexico
Del Muro, Margarita G. E., Ramon Guaman 129-5, Mexico, D. F., Mexico
Dias, Vinicius Moreira, Avenida N. S. de Copa, Cabana 534, Rio de Janeiro, Brazil, S. A.
Dragos, Rebecca, 4822 Walwit Street, Dearborn, Michigan
Durham, Clotilde, 636 Newton Pl. N. W., Apt. 106, Washington 10, D. C.
Dwyer, Evelyn A., 201 South Dithridge St., Pittsburgh 13, Penna.
Dyke, Leland W., 26 East Sunnyside, Lawrence, Kansas
Evans, Edson E., Route #4, Box 860, Pine Bluff, Ark.
Eylar, Ollie R., Dept. of Bact. & Immunology, University of Minnesota, Minneapolis 14, Minn.
Feldman, Harvey R., 524 Church Street, Bound Brook, New Jersey
Fell, Margery T., Camp Detrick, Frederick, Md.
Felton, Frances G., V. A. Hospital, 921 N.E. 13th, Oklahoma City, Oklahoma
Ferguson, Raymond A., 1023 "C" Birch Road, East Lansing, Michigan
Fernelius, Albert L., 523 Grant Place, Frederick, Md.
Fischer, Barbaralu, 703 Sixth Street, Charleston 2, W. Va.
Foeckler, Francis H., 4214 Russell Ave., Apt. 8, Mt. Rainer, Md.
Formica, Joseph V., 7705 88th Ave., Woodhaven 21, Long Island, N. Y.
Foster, John C., Ave. G & 11th St., Riverside, Pa.
Fresa, Louis A., Jr., 3801 Sunview Drive, Pittsburgh 27, Penna.
Fukuyama, Thomas T., Pvt., US 56226926, 9766 T.S.U. Det. #1, Camp Detrick, Frederick, Md.
Fuld, Maria, Grad. School of Public Health, University of Pittsburgh, Pittsburgh, Penna.
Fuller, Vernon J., Dept. of Bacteriology, School of Medicine, George Washington University, Washington 5, D. C.
Funk, Wylma F., 9153 E. 164th St., Bellflower, Calif.
Garber, Edward D., Dept. of Botany, University of Chicago, Chicago 37, Ill.
Gates, Milford S., 1516 Brinckerkoff Ave., Utica, New York
Gifford, George E., Department of Bacteriology & Immunology, Univ. of Minnesota, 227 Millard Hall, Minneapolis, Minnesota
Goff, George Allen, Jacksonville Blood Bank, 536 W. Tenth St., Jacksonville, Fla.
Gold, Ruth B., 108 Talisman Court, York, Penna.
Goldberg, Albert J., 2547 Hubbard St., Brooklyn 35, N. Y.
Gonzalez-Mendoza, Amado, Luz Savinon 11, Col del Valle, Mexico 12, D. F., Mexico
Goodgal, Sol H., Dept. of Bact., Johns Hopkins Univ., School of Hygiene & Pub. Hlth., Baltimore 5, Md.

Goucher, Charles R., Army Medical Research Lab., Fort Knox, Ky.
Gouge, Susan C. J., 5419 Patton Terrace, Route 2, Falls Church, Va.
Gourevitch, Alexander, 231 Greenwood Place, Syracuse 10, N. Y.
Grant, Carroll W., Brooklyn College, Bedford Avenue at "H", Brooklyn 10, New York
Grantham, Rodney G., Jr., P. O. Box 4242, University, Alabama
Green, David, 1 Hanson Place, Brooklyn, N. Y.
Griffin, Charles W., 4620 Knox Rd., Apt. 2, College Park, Md.
Grossbard, Erna, Dept. of Biochem., Univ. of Leeds, 9 Hyde Terrace, Leeds 2, England
Hadley, Keith William, 1765 Oxford St., Berkeley 9, Calif.
Haddath, Jane E., 2950 Princeton Place, Indianapolis 5, Ind.
Hall, George O., 323 4th Avenue, Pittsburgh 19, Pa.
Hardin, Dorothy E., 1637 East 1st St., Tucson, Arizona
Hartman, Ronald E., Box 133, Braddock Heights, Md.
Hegan, Nancy A., Bacteriology Dept., The Pennsylvania St. Univ., State College, Pa.
Heiger, Arnold A., 869 Hopkinson Ave., Brooklyn 12, New York
Henderson, Jack R., Mt. Sinai Hospital, 15th & California, Chicago, Ill.
Hill, Walter Lee, 3700 USAF Hospital, Lackland Air Base, San Antonio, Texas
Hillman, Marilyn J., 200 Berryman Drive, Snyder 21, New York
Hoff, John C., 911 East 6th Street, Helena, Montana
Hotta, Susumu, Department of Microbiology, University of Washington, Seattle, Wash.
Hubbert, Jasper S., Lubbock Memorial Hospital, Lubbock, Texas
Hubsch, Harold L., 241 Hunter Ave., Trenton 10, New Jersey
Huggins, Cecile, Department of Biology, University of South Carolina, Columbia, South Carolina
Hughes, Inge M., % Dr. A. Michelson, 200 East Main Street, Patchogue, Long Island, New York
Husseini, Haider, Government Central Lab., Amman, Jordan
Ibarra, MaElona, Coahuila 175, Col Roma, Mexico, D. F., Mexico
Ikari, Norman S., 1840 West Grace St., Richmond 20, Virginia
Imperial, Salvator M., Department of Biology, Lehigh University, Bethlehem, Penna.
Isokane, Robert K., % 1312 Marcy Street, Iowa City, Iowa
Jagger, John, 64 Morris Cove Rd., New Haven 13, Conn.
Johnson, Charles E., Route 7, Box 67, Olympia, Wash.
Johnson, Ivory C., Room #875, 808 South Wood St., Chicago 12, Illinois
Karrer, Aurora, 104 Northbrook Lane, Washington, D. C.
Kaufman, Leo, % Dept. Bact., University of Kentucky, Lexington, Ky.
Kawatomari, Toshio, 121 Hughes Hall, University of California, Davis, Calif.
Keller, Nick C., North East Dist. Health Dept., Sterling, Colorado
Kellogg, Jeanne, 312 Alderson Ave., Billings, Montana
Kelman, Arthur, Plant Pathology Dept., Box 5397, N. C. State College, Raleigh, N. C.
Kendall, Carl T., Mead Johnson & Company, Bacteriological Control Lab., Evansville, Indiana
Kizer, Donald E., Dairy Manufacturing Section, Animal Industry Dept., North Carolina State College, Raleigh, North Carolina
Knettles, Mary E., Department of Bacteriology, Louisiana State University, Baton Rouge, Louisiana
Knox, Robert, Dept. of Bact., Guy's Hosp. Med. School, London Bridge, S. E. 1, London, England
Kohr, Gerald W., 1280 Lititz Pike, Lancaster, Penna.
Konoski, Joseph R., Department of Bacteriology, Indiana University, Bloomington, Indiana
Kos, Edward S., Dept. of Bact., Noyes Lab., University of Illinois, Urbana, Illinois
Kraft, Lisbeth M., 310 Cedar St., New Haven, Conn.
Kraus, Frederick W., 114 Stratford Road, Birmingham 9, Ala.
Krutulis, Stanley B., Bridgeport, New York
Kubista, Raymond A., Wisconsin Alumni Res. Foundation, P. O. Box 2059, Madison 1, Wisconsin
Kukolnik, Florence D., 294 Avenue "C", Bayonne, N. J.
Kuroda, Kenzo, Kilian Research Laboratory, Wieting-Johnson Hospital, 960 Salt Spring Road, Syracuse, New York
Lambe, Dwight, Jr., 2115 Caloosa Drive, Fort Myers, Fla.
Larkin, Mary C., 731 Hazelhurst Ave., Merion 61, Penna.
Larsen, Bernhard, Supplee-Wills-Jones Milk Co., 15 South 34th St., Philadelphia 4, Penna.
Lasley, Betty J., 36 Watnong Drive, Morris Plains, N. J.
Lemus, Concha H., Min. de Agric. y Ganaderia, Lab. Sanidad Animal, San Salvador, El Salvador, C. A.

Levinson, Richard A., 5823 North Winthrop, Chicago 40, Ill.
Levy, Richard S., 655 Stetson Road, Elkins Park, Pa.
Linardos, Constantine G., 1349 Fairfield Ave., Bridgeport, Conn.
Lindorfer, Robert K., 1285 Hamline Ave., N., St. Paul 3, Minn.
Lindstaedt, William A., 2357 Broadway, Indianapolis 5, Ind.
London, Sheldon A., 177 East Delaware Ave., Newark, Delaware
Long, Keith R., Department of Obstetrics & Gyn., Univ. of Kansas Med. Center, 89th & Rainbow, Kansas City, Kansas
Lopez, Laura M., 201 Walnut Street, Nogales, Arizona
Low, Iolanda E., 28 Littell Road, Brookline, Mass.
Lubarsky, Robert, Botany Department, Univ. of Calif. at Los Angeles, Los Angeles 24, Calif.
Lynch, Kenneth L., R. R. #7, Box 732, Milwaukee 16, Wisc.
McCloskey, Lambert W., 1435 Milan Ave., Pittsburgh 26, Penna.
McNeil, Betty S., 1519 N.W. 23rd St., San Antonio, Texas
MacGregor, Francisco, Alzate 256, Mexico 17, D. F., Mexico
Mace, Kenneth D., Route #2, West Fork, Arkansas
Mackie, Dorris G., 128 South Euclid Ave., Westfield, N. J.
Martelli, Hebe Labarthe, Escola Nacional de Quimica, Avenida Pasteur, 404 Fundos, Rio de Janeiro, Brazil, S. A.
Martin, Edgar R., 617 3rd Ave., Altoona, Pa.
Massena, Malinda Lou, 604 Pitcairn Place, Pittsburgh 32, Penna.
Mather, Glenn B., R. R. #4, Logansport, Ind.
Matsumoto, Charles, Dept. of Bact., University of Idaho, Moscow, Idaho
Mauce, Rudolf, 1110 West 65th, Seattle 7, Wash.
Mazzarella, Maurice A., Naval Dental School, N. N. M. C., Bethesda, Maryland
Mendelon, Laura M., 690 Riverdale Ave., Brooklyn 7, N. Y.
Miller, Tilford D., Dept. of Food Technology, Univ. of Massachusetts, Amherst, Mass.
Miya, Fred, Station #1, Box 417, Provo, Utah
Mogabgab, William J., Lt., Naval Med. Res. Unit No. 4, U. S. N. T. C., Great Lakes, Ill.
Moore, Keith E., 2531 East Piccadilly Road, Phoenix, Arizona
Morgan, Paul V., 4341 Andover Terrace, Pittsburgh 13, Pa.
Morgan, Philip B., 1420 West 7th Street, Frederick, Maryland
Muentener, Donald A., 1807 Loraine Ave., Lansing, Michigan
Mulligan, Bernard J., 56 Ruth Ave., Rumford, R. I.
Muraoka, James S., Basic Sciences Res. Dept., (Navcerelab), Port Hueneme, Calif.
Naughton, Walter F., #1 Longfellow Drive, Rahway, (P. O.), N. J.
Navarro-y-M, Armando, Victor Hugo 79, Mexico City, Mexico
Neal, Mary Jane, Dept. of Biological Sciences, Purdue University, Lafayette, Indiana
Newman, Benjamin, 584 Broad St., Clifton, New Jersey
O'Barr, Thomas P., 1404 West 29th Street—rear, Austin, Texas
Olsen, Robert A., 1405 Maiden Lane, Pullman, Washington
Osterhout, Suydam, Box #3330, Duke Hospital, Durham, N. C.
Page, Robert H., 131 Grand Ave., Mt. Clemens, Mich.
Pelon, William, % A. Lipira, West Rocks Road, Route 3, Norwalk, Conn.
Perry, Jerome J., Department of Bacteriology, University of Texas, Austin, Texas
Peterson, Glen E., Department of Biology, University of Houston, Houston, Texas
Peterson, Laverne E., Eli Lilly & Company, Department K 486, Indianapolis, Indiana
Pottz, Glenn E., St. Luke's Hospital, Denver 5, Colo.
Prince, Herbert N., Department of Bacteriology, U-44, University of Connecticut, Storrs, Conn.
Rachmeler, Martin, 390 Chemical Laboratory, Army Chemical Center, Maryland
Ramos, Cordova Mario, Berna 6, Esq. con Reforma., Mexico, Mexico
Ramsdell, Frances W., Dept. of Bacteriology, University of California, Los Angeles 24, Calif.
Rapoza, Norbert P., 95 East 12th Ave., Columbus, Ohio
Reese, Laura M., Macon Branch Lab., Macon, Georgia
Robinson, Glenna R., Box 458, Edwards, Calif.
Robinson, Veronica Ann, Hahnemann Medical College, 235 North 15th St., Philadelphia 2, Penna.
Rogers, Charles G., Vitamin Section, Food & Drug Labs., 35 John St., Ottawa, Canada
Rogers, Raymond E., 4278 Oxford Drive, Baton Rouge, La.
Rogoff, Martin H., Dept. Bact., Penna. State University State College, Penna.
Rosenbaum, Manuel, Department of Bacteriology, University of Michigan, Ann Arbor, Mich.

Rotondi, Alfred G., Jr., 388 Clifton Ave., Newark, N. J.

Russo, Mose A., 114 Baxter Blvd., Portland, Maine

Sadoff, Harold L., H-57-C Stadium Terrace, Champaign, Ill.

Sanchez, Arsenio M., 1216 North West 21st Ave., Gainesville, Fla.

Schindler, Charles A., 1209 Baylor St., Austin, Texas

Schlosser, Mary Ellen, Spruce Knoll Farm, Chester Springs, Penna.

Schulze, Lucille K., 4954 West Pine Blvd., St. Louis 8, Mo.

Schuurmans, David M., Michigan Dept. of Hlth. Labs., Lansing, Michigan

Sfat, Michael R., Rahr Malting Co., 605 Washington, Manitowoc, Wisc.

Shull, James J., Dept. of Bact., Pennsylvania State University, State College, Pa.

Simonds, Thomas H., Vets. Admin. Center-Lab., Martinsburg, W. Va.

Sirotnak, Francis M., 513 Edgar St., Throop 12, Pa.

Skerman, Victor Bruce D., Department of Bacteriology, University of Queensland, % Chief Librarian, Brisbane, Australia

Slodki, Morey E., Dept. of Biochemistry, Med. Labs., St. Univ. of Iowa, Iowa City, Iowa

Smibert, Robert M., II, 430 Platt Avenue, West Haven, Conn.

Smith, Harry L., Apartment 3A, 832 Pine St., Philadelphia 7, Penna.

Smith, Josephine D., Univ. of Minnesota, Dept. of Bact. & Immunology, Minneapolis, Minn.

Smith, Roberts A., Dept. of Bact., Univ. of Illinois, Urbana, Ill.

Smith, W. Russell, Department of Biology, Lamar State Coll. of Tech., Beaumont, Texas

Snead, Samuel L., 7818 Hamilton Ave., Pittsburgh 21, Pa.

Soble, Lawrence W., 7620 S. Essex Ave., Chicago 49, Ill.

Sokatch, John T., Department of Bacteriology, 362 Noyes Laboratory, Urbana, Illinois

Spalding, Donald H., 219 Patterson St., Apartment 2, Midland, Mich.

Standley, Elizabeth S., 2340 Rinwood Avenue, Coytesville, New Jersey

Staples, Robert F., 621 E. Evergreen St., Wheaton, Ill.

Starr, Theodore J., Marine Biology Lab., Sapelo Island, Ga.

Stevens, Joseph-Alfred, Apartment 2, 224 Highland Ave., East Lansing, Michigan

Stewart, Orma C., Jr., 3610 Allerton St., Whittier, Calif.

Stone, Florence M., 10 Montague Terrace, Apartment C-3, Brooklyn 1, New York

Takalo, David S., Emmanuel Hospital, 2800 North Commercial, Portland 12, Oregon

Tankersley, Robert W., Jr., Bacteriology Department, Stanford University, Stanford, Calif.

Taschner, Leslie E., 3210 Maringo Road, Olympia, Wash.

Theodore, Theodore S., 635 Corey Avenue, Braddock, Pa.

Titus, Dudley S., Box 571, C. S., Pullman, Wash.

Tourtellotte, Mark E., Box 113, Storrs, Conn.

Townsend, G. Frederick, 16 North Gosse Blvd., Princeton, Illinois

Tucker, Jesse S., Rd. #1, Northampton, Pa.

Vanderzant, Wilhelmus C., Dept. of Dairy Husbandry, College Station, Texas

Vento, Salvatore, 31–76 33rd Street, Long Island City 6, New York

Vezina, Claude, 509 North Lake St., Apartment 501, Madison, Wisconsin

Walker, Alma Toevs, 342 Florida Ave., Athens, Ga.

Waller, Helen P., 479 N.W. 84th Lane, Miami 38, Fla.

Watkins, Jerry F., 520 Ellis, Peoria 5, Ill.

Wells, Charles C., Research Laboratory, Swift & Company, 4115 Packers Ave., Chicago 9, Illinois

Welton, Lewis D., 749 Walnut St., Lawrence, Kansas

Wheeler, Harry O., Department of Biology, University of Houston, Houston, Texas

Whitney, Dorothy M., Rickettsial Laboratory, Medical Branch of the Univ. of Texas, Galveston, Texas

Wiesen, Carl F., Department of Bacteriology, University of Texas, Austin, Texas

Williams, Elizabeth M., P. O. Box 1133, Bethlehem, Pa.

Williams, Verna L., Room 351, City Hall, Spokane 1, Washington

Wilson, Cyril D., Vestal Inc., 4963 Manchester, St. Louis 10, Mo.

Wilson, Dwight E., Sloane Physics Lab., Yale University, New Haven, Conn.

Wilson, Robert J., 4610 Blackfoot Ave., San Diego 17, Calif.

Wilson, Thomas E., University of Oklahoma, Bact. Dept., Sch. of Med., 801 N.E. 13th St., Oklahoma City 4, Oklahoma

Wohleb, Joseph, Jr., 716 S. Milroy, Olympia, Wash.

Wood, Harrison F., Rockefeller Institute Hospital, 66th St. & York Ave., New York 21, N. Y.

Woodburn, Marcia A., 280 Bronxville Road, Bronxville, New York

Wright, Barbara E., Nat'l. Inst. of Health, Bethesda 14, Md.

Wylie, Edward B., 5025 Tomahawk Trail, Madison, Wisconsin

Yanagita, Tomomichi, Department of Bacteriology, University of Texas, Austin, Texas
Young, Florence L., 2134 Southampton Rd., Jacksonville 7, Florida
Zaffaroni, Alejandro, Syntex S. A., Km. 13½ de la carretera a Toluca, Mexico, D. F., Mexico
Zucchero, John F., 1329 Linwood Blvd., Kansas City 9, Missouri
Zuffante, Saverio M., 145 Merrimac Street, Pittsburgh 11, Pa.

Deceased Members

Burri, Robert, Dairy Research Inst., Lienefeld bei., Berne, Switzerland
Harris, Norman Mac L., 53 MacLaren Street, Ottawa, Canada
Mohler, John R., Bureau of Animal Industry, Washington, D. C.
Swift, Homer F., Apt. #8, 888 Park Avenue, New York 21, N. Y.

Made possible by the

National Foundation for Infantile Paralysis, Inc.

T. E. BOYD'S

Immunization Against Poliomyelitis

A concise account of methods and results sufficient to enable you to judge for yourself the significance of various individual contributions. Includes literature up to mid-1953. Originally published as a special supplement to the December issue of **BACTERIOLOGICAL REVIEWS.**

109 pages 206-reference bibliography $1.50

Payment must accompany order

Order your copy today from:

Society of American Bacteriologists
Mt. Royal & Guilford Avenues
Baltimore 2, Maryland

CUMULATIVE INDEX
TO THE
JOURNAL OF BACTERIOLOGY

Volumes 31 to 64 (1937–1952)

INCREASE THE USEFULNESS of your volumes of the Journal.
Locate the EXACT INFORMATION you need—quickly and easily.
Turn to ANY SUBJECT—any author—from any issue—with a minimum of time and effort.
Find ALL the articles that have appeared in the Journal on the topic of particular interest to you.
Available Now. Send in your order promptly—the supply is limited.

THE WILLIAMS & WILKINS COMPANY
Mt. Royal and Guilford Aves., Baltimore 2, Maryland

Please send: CUMULATIVE INDEX to the JOURNAL OF BACTERIOLOGY, Vols. 31–64. I enclose $7.50

NAME _____

ADDRESS _____

Keep Up to Date in Microbiology—

Subscribe to the S. A. B.-Sponsored Journal

APPLIED MICROBIOLOGY

A Practical Bimonthly

Editor: H. BOYD WOODRUFF, Microbiological Research Department, MERCK & CO., Inc., Rahway, N. J.

A new journal in 1953

Designed for the publication of studies oriented toward the application of microbiological sciences to the fields of industry, foods, sanitation, agriculture, and other areas involving the use or control of microorganisms, with the exception of the microbiological aspects of animal and plant disease.

Features:

Articles concerned with the microbiology or microbiological biochemistry of the processes under consideration or with engineering aspects which influence microbiological processes

Discussions of scientific experimentation and processes resulting from such experimentation

Occasional "Industry Reports" summarizing the present status of a microbiological process of general interest

Broad Scope:

Articles of interest to workers in the following fields: yeast, bread, soils, wines, agriculture, dairy products, distilling, antibiotics, chemical disinfection, water pipe lines, brewing, seeds, food microbiology, mushrooms, fish and wildlife, pharmaceutics, bioengineering, sanitation

Editorial Board

Editors divided evenly—among universities, government laboratories, and industry

Published bimonthly, one volume ($8\frac{1}{2}$ x $11\frac{1}{4}$, of about 400 pp.) a year beginning January.

Subscription price per volume $7.50

THE WILLIAMS & WILKINS COMPANY

Mt. Royal and Guilford Aves. **Baltimore 2, Maryland**